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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
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*Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

TRANSLATIONS SERVICE ACCESSIONS. 1 Aug 61 [21]p. APL/JHU TG 230-T240.
Order from OTS or SLA $2.60 61-28123

Translated titles of selected articles on aeronautical engineering, automation, chemical physics, chemistry, electronics and radio, engineering, geophysics, mathematics, physiology, and physics from current Russian periodicals.

DESCRIPTORS: *Translations, *Scientific reports, Bibliography, Periodicals, Indexes, USSR.

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
Mar 62, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

Gruzdev, G. S.
METHODS OF DETERMINING WEED INFESTATION AND THEIR APPLICATION (Metody Ucheta Sornoi Rastitel'nosti i Ikh Primenenie) tr. by M. Slade. [1961] [15]p. (foreign text included). [CSIRO] Trans. no. 5345.
Order from OTS or SLA $1.60 61-28636

Trans. of [Moskovskaya Sel'skokhozyaistvennaya Akademiya]. Doklady (USSR) 1957, v. 28, p. 71-77.

DESCRIPTORS: *Crops, *Plants, *Pest control, Herbicides, Agriculture.

Markovic, P.
CEREAL PRODUCTION AND YIELDS ON PEASANT WORK CO-OPERATIVES IN 1951 (Prinos Belih Zitarica u Seljackim Radnim Zadrugama u 1951). 1961, 7p. PL-480 Agr.
Order from OTS $0.50 60-21698

Trans. of Bulletin of Information and Documentation (Yugoslavia) 1952, v. 1, no. 4, p. 21-26.

DESCRIPTORS: *Cereals, Rye, Barley, Wheat, *Production, *Growth, Soils, Climatic factors, Precipitation.

Sizov, I. A.
AUS DER PRAXIS DER LANDWIRTSCHAFT HOLLANDS (Iz Opyta Sel'skogo Khozyaĭstva Hollandiĭ) (From the Praxis of the Agriculture in Holland; Personal Impressions). 6p. MTWL: 965. (Text in German).
Order from OTS or ETC $1.55 61-17527

DESCRIPTORS: *Agriculture, Holland.

Sizov, I. A.
AUSZÜGE AUS DEM BUCHE "DER FLACHS" (Extracts from the book "The Flax")39p. 54 refs. MTWL: 966. (Text in German).
Order from OTS or ETC $2.61 61-17528

DESCRIPTORS: *Agriculture, SSSR.

Sizov, I. A.
DER FLACHSANBAU IN DER SOWJETUNION (Vozdelyvanie L'na v SSSR) (Flax growing in the USSR) 9p. MTWL: 964. (Text in German).
Order from OTS or ETC $1.55 61-17526

Trans. of Agrobiologiya (USSR) 1957, no. 5.

DESCRIPTORS: *Agriculture, SSSR.

Animal Husbandry

Belov, E. M.
ABOUT THE ORGANIZATION OF A STATE VETERINARY CONTROL OF THE FISHERY RESERVOIRS OF THE USSR (Ob Organizatsii Gosudarstvennogo Veterinarnogo Nadzora za Rybokhozyaistvennymi Vodoemami SSSR). 14 Aug 61, 3p. Trans. V-1723.
Order from OTS or SLA $1.10 61-28443

Trans. of Veterinariya (USSR) 1961, v. 38, no. 3, p. 15-16.

DESCRIPTORS: *Veterinary medicine, *Fisheries, Fishes.

Dubinin, V. B.
PARASITIC FAUNA OF WILD BOARS IN THE VOLGA DELTA, tr. by P. A. Kazakov. [1961] [17]p. 10 refs. [CSIRO Trans.] 5413.
Order from OTS or SLA $1.60 61-27449

Trans. of Leningradskoe Obshchestvo Estestvoispytatelei. Trudy (USSR) 1952, v. 71, no. 4, p. 73-81.

DESCRIPTORS: *Swine, Veterinary medicine, Food, Animals, *Parasitic infections, *Trematodes, Worms, *Ascaris, Frogs, Ecology.

A complete parasitological post-morten examination (except protozoa) was made on 58 adult and young wild boars caught at the Obzhorov (46) and Damchik (12) Sections of the Astrakhan Game Reservation in 1938-1940. Parasitological investigations were carried out during all the seasons with a simultaneous study of the biology of the host. Among the fourteen recorded species of parasites only two (Gnathostoma hispidum and Gasterodiscoides hominis) are represented in large numbers and are of practical interest. The heavy infestation of wild boars with the trematode G. hominis indicates its probable presence in domestic animals and the possibility of the infestation of man. The seasonal dynamics of the population and the predominant species composition of parasitic worms in wild boars depend on the whole on two causes: (1) migrations of wild boars from sea-shores to dry meadows and vice versa under the effects of spring high waters, and (2) the extent of contacts between wild boars and domestic pigs (the frequency of visits by wild boars to pastures or direct contacts).

Grushin, S. V.
INTERKOLKHOZ CENTERS OF LIVESTOCK FATTENING (Mezhkolkhoznye Punkty Otkorma Skota). 25 Aug 61, 18p. (2 figs. Eng. Ger. Fr. summaries omitted). Trans. A-1290.
Order from OTS or SLA $1.60 61-28439

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1961, v. 6, no. 5, p. 67-74.

DESCRIPTORS: *Food, *Cattle, Feeding

Morgunov, I. N. and Yagud, S. L.
TWO CASES OF BOTULISM, CONNECTED WITH THE CONSUMPTION OF FISH, PERTAINING TO THE CLASS OF FISH KNOWN AS "CHASTIK" (Dva Sluchaya Botulizma, Svyazannye s Potrebleniem "Chastikovoi" Ryby). 18 Apr 61, 4p. Trans. V-1675.
Order from OTS or SLA $1.10 61-19762

Trans. of mono. Nauchno-Issledovatel'skii Institut Epidemiologii i Mikrobiologii, Kiev. Materialy Nauchnykh Konferentsii, Kiev, 1959, p. 49-51.

DESCRIPTORS: *Botulism, *Fishes, Consumption, Diseases.

Ratomski, A.
DE WAARDE VAN DE DIAGNOSTIEK VAN AGGLUTINATIE EN DE COMPLEMENTBINDING BIJ BRUCELLOSE VAN HET VEE (Worth of Diagnosis of Agglutination and the Complement Bond at Brucellosis of the Cattle). 11p. MTWL: 944. (Text in Dutch).
Order from OTS or ETC $1.55 61-17564

DESCRIPTORS: *Cattle, *Brucellosis, Hemagglutinins, Diagnosis.

Plant Cultivation

USSR AND CZECHOSLOVAK INSECTICIDE DEVELOPMENTS. 18 Dec 61 [18]p. JPRS: 11711.
Order from OTS or SLA $1.60 62-15243

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1961 [v. 6] no. 6, p. 11-13, 34-35, 41-42, 52-54.

DESCRIPTORS: *Insecticides, Pest control, Agriculture, Poisons, Herbicides, Phosphorus compounds.

Contents:
Chemical weed killing experiments in Czechoslovakia, by Iirzhi Zemanek
Phosphororganic insecticides (continuation) by P. V. Popov
Séed dressers, by E. I. Andreeva
Polychlorpinene and chlorophos in the fight against forest pests, by D. F. Rudnev
Stricter supervision over the use of chemical weed and pest killers, by M. G. Shevchenko.

Baranova, E. A.
THE FORMATION AND DEVELOPMENT OF AXILLARY AND DORMANT BUDS IN THE GENUS EUCALYPTUS (Formirovanie i Razvitie Pazushnykh i Spyashchikh Pochek u Evkalipta). [1961] [20]p. (foreign text included) 7 refs. [CSIRO] Trans. no. 5195.
Order from OTS or SLA $1.60 61-28643

Trans. of Botanicheskii Zhurnal (USSR) 1960, v. 45, no. 8, p. 1169-1175.

DESCRIPTORS: *Plants, *Ecology, Growth, *Reproduction, Regeneration.

Exogenic and endogenic bud vernation occur in the eucalypt. Buds with exogenic vernation develop as a rule into axil shoots without any hindrance. Some bud shoots are normally developing side shoots, others cease to develop at the stage of second leaf-pair formation. Such incompletely developed shoots usually fall off a few months after vernation. At the place where a wound due to such separation occurs, a multi-layer protective layer is formed. Eucalypt's endogenic buds are adventive and typically dormant. They can remain in a latent condition over many years without any further differentiation. The degree of dormant bud differentiation is insignificant; they consist of a point of growth and two or four embryonic leaves. They have no apex growth. Dormant buds are connected with the stem's conducting system by means of a bud trace consisting of spiral vessels and tracheids and incapable of secondary growth in width. The growth of the bud trace in length at the early stages of its development is due to the fission of node parenchyma cells and their consequent increase in size. Later, a bud trace grows as a result of the activity of the cambium appearing in the node's parenchyma. (Author)

Itano, Arao, Kan, Yang-sheng, and Hsieh, Te-ling.
BACTERIAL TRANSFORMATION OF INSOLUBLE ORGANIC AND INORGANIC PHOSPHOROUS COMPOUNDS INTO SOLUBLE PHOSPHATES IN SOILS. 19 Sep 61 [11]p. 2 refs. JPRS: 4991.
Order from OTS or SLA $1.60 61-28571

Trans. of T'u Jang Hsüeh Pao (Chinese People's Republic) 1956, v. 4, no. 2, p. 179-184.

DESCRIPTORS: *Bacteria, *Phosphorous compounds, *Phosphates, *Soils, *Wheat, Growth, Production, Organic compounds, Inorganic substances, Plants.

Experimental results are reported of pot and field tests made on the effect of the inoculation of wheat with strains of Bacillus megatherium var phosphaticum Kungchuling.

Kozlova, E. I.
PENETRATION OF ORGANIC INSECTICIDES INTO PLANT TISSUES. 5p. MTWL: 586.
Order from OTS or ETC $1.40 61-17301

Trans. of Vsesoyuznaya Akademiya Sel'skokhozyaĭstvennykh Nauk Imeni V. I. Lenina. Doklady, 1950, no. 3, p. 30-32.

DESCRIPTORS: *Insecticides, Plants, Tissues, Penetration.

Schytil, Franz and Fevrier, Jean.
PROCEDURE FOR PRODUCTION OF GRANULATED FERTILIZERS. [1961] [9]p. 10 refs.
Order from OTS or SLA $1.10 61-20900

Trans. of German patent specifications 1 100 657 M 405231 IVa/16, cl. 16 3, by Metal Society A. G. and S.A. Potasco (Belgium) appl. 17 Feb 59, appl. pub. and specifications issued 2 Mar 61.

DESCRIPTORS: Production, *Fertilizers, Chemical analysis

The Thomas Flour to be granulated or the Thomas Flour mixture, is introduced into a grateless vortex chamber with an aperture angle, which widens towards the upper part, by simultaneous or previous wetting, into which a stream of hot gas of at least 600°C is introduced from below, which from a free floating vortex stratum, whereby the fertilizers are granulated to a grain size of 0, 35 to 2, 5mm.

Seo, Hisao.
ON THE CHANGE IN THE RESPIRATION OF THE GROWING TOBACCO PLANT. [1961] [15]p. (14 Eng. refs. omitted) 13 refs.
Available on loan from SLA 62-10919

Trans. of [Tabako Shikenjo] Hatano. [Tokubetsu Hokoku] (Japan) 1958, no. 39, p. 23-37.

DESCRIPTORS: *Respiration, Growth, *Tobacco, Plants, *Evapotranspiration, Measurement Age factors

An automatic transpiration-measurement apparatus is described. Results with this apparatus showed that the daily transpiration of tobacco plants is affected by weather, atmosphere and other factors. A gradual increase occurs with the increase in volume of the plant during growth, but after topping there is a gradual fall with the reduction in size (due to the topping) and with the subsequent maturing of the leaves. Transpiration per plant per day reached a maximum of about 1, 600 cc, with an average of 494. 7 cc. Total transpiration per plant was about 30 liters. Transpiration per unit leaf area was fairly high after transplanting, and reached a maximum of about 0. 25 g, but it subsequently declined with maturing and drying. Sunlight had a great effect on transpiration. This effect declined with maturity.

Stojicevic, D.
METHOD AND RESULTS OF INVESTIGATION OF SOIL WATER PERMEABILITY OF THE MAIN SOIL TYPES IN SERBIA UNDER FIELD CONDITIONS (Metodika i Rezultati Ispitivanja Permeabilnosti Zemljisnih Voda u Glavnim Tipovima Zemljista Srbije) tr. by Mladen Pantelic. 1961, 11p. 3 refs. PL-480 agr.
Order from OTS $0.50 60-21629

Trans. of Belgrade U. Poljoprivredni Fakultet. Zbornik Radova. [Review of Research Work] Yugoslavia) 1955, v. 2, p. 185-194.

DESCRIPTORS: *Soils, Siberia, Moisture, Permeability, Test methods, Test equipment, Tests.

A literary study of various methods of investigation of the soil water permeability showed that the most suitable method and apparatus for investigation of the soil water permeability under field conditions are those described by V. M. Klychnikov (1952). This method and the apparatus were improved. The apparatus functions automatically on the principle of Mariott's vessel work ing under a constant pressure, keeping the water level above the sample, which can be adjusted to an amount

from 2 to 5 cm. Deviations for keeping up the level are 2 or 3 mm. These deviations only slightly affect the results. The apparatus is very economical in using water and is easy to handle. The cylinder for taking out soil samples has the cross section of 500 cm^2, and the height amounts to 25 cm. When taking samples of soil, the cylinder may be pressed in to the depth of 20 cm. The apparatus and methods for testing the soil water permeability in the soil, under field conditions, have given satisfactory results. The average results from several repetitions for testing the soil water permeability of the main soil types in Serbia are tabulated. The drawback of the apparatus consists in that much time must be spent in the field during the time of the experiment.

Tesic, Z.
PROBLEM OF MYCORRHIZA RESEARCH IN FORESTRY (Problem Istrazivanja Mikoriza u Sumarstvu) tr. by Mladen Pantelic. 1961, 8p. 1 ref. PL-480 Agr.
Order from OTS $0.50 60-21640

Trans. of Sumarstvo (Yugoslavia) 1958, v. 9, no. 7/8, p. 444-448.

DESCRIPTORS: *Fungi, *Growth, Trees, *Forestry, *Ecology, Soil, Spores, Reproduction, Plants.

Data of interest to Yugoslav forest experts are given that were taken from the German-language monograph written by J. Bergemann (Grundlagen und Probleme der Mykorrhizaforschung in inhrer bedeutung fur die Forstwirtschaft, 1953).

Voevodin, A. V., Beshanov, A. V., and Khotyanovich, A. V.
TESTING GRANULAR HERBICIDES (Ispytanie Granulirovannykh Gerbitsidov). 10 Aug 61, 6p. Trans. A-1285.
Order from OTS or SLA $1.10 61-28436

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1961, v. 6, no. 4, p. 18-19.

DESCRIPTORS: *Herbicides, Tests.

Granular DNOC [dinitro-ortho-cresol] in quantities of 30 kg/ha (6 kg of technical preparation) killed 66.2% of weeds, while the magnitude of those that survived was 21.8% less than among controls. The notable decrease of weeds occurred on test plots treated with 2,4-D (15 kg/ha), PCP [penta chlorophenol] (50 kg) and chloro- PC [isopropyl-N-3-chlorophenylcarbamate] (75 kg). For more than 50 days no new weeds appeared, while on test plots treated with conventional herbicides they grew in considerable quantities after 30-35 days. Granular sodium penta chlorophenol applied in doses of 50 kg/ha (5 kg of the technical preparation) decreased the yield of beets almost 4% (the conventional form of it applied in doses of 10-15 kg/ha is harmless for beets).

ASTRONOMY

Gnevyshev, M. N.
THE SOLAR ECLIPSE OF 15 FEB 61. 20 Sep 61 [8]p. JPRS: 8902.
Order from OTS or SLA $1.10 61-28737

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 5, p. 55-59.

DESCRIPTORS: *Solar eclipse, *Astronomical cameras, Astronomical observatories, Solar atmosphere, Solar corona.

The principal objective of the observations was the intensive and thorough investigation of the sun's outer corona by all methods, at the greatest possible distances from the photosphere, where the corona phases out to interplanetary gas. During the time of the eclipse interest was devoted to observations of faint lines in their spectra. In the eclipse zone there was accomplished the simultaneous launching of a series of geophysical rockets, from which there were made investigations of the corona and changes in the characteristics of the earth's atmosphere during the time of the eclipse. (Extracted)

Astrophysics

Barbier, D. and Glaume, J.
A NEW DETERMINATION OF THE ALTITUDE OF EMISSION OF THE GREEN LINE OF THE LIGHT OF THE NIGHT SKY BY VAN RHIJN'S METHOD (Nouvelle Determination de l'Altitude d'Emission de la Raie Verte de la Lumiere du Ciel Nocturne par la Methode de Van Rhijn). [1961] [8]p. 10 refs.
Order from SLA $1.10 62-10142

Trans. of Annales de Geophysique (France) 1957, v. 13, no. 4, p. 317-320.

DESCRIPTORS: *Night sky, Brightness, Stars, Measurement, *Height finding, Light, Scattering, Brightness, Radiation, Intensity, Instrumentation.

New observations show that the green line is emitted at a low altitude. (Author)

Dufay, Maurice.
ON THE INTENSITIES OF THE EMISSION BANDS OF THE NIGHT SKY IN THE NEAR INFRARED (Physique de l' Atmosphere. Sur les Intensites des Bandes d'Emission du Ciel Nocturne dans le Proche Infrarouge). [1961] [5]p. 7 refs.
Order from SLA $1.10 62-10134

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1958, v. 246, no. 15, p. 2281-2283 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Night sky, *Infrared spectroscopy, Infrared radiation, Intensity, Instrumentation, Climatic factors.

Recordings of the spectrum of the night sky in the near infrared, using a monochromator with rotating grating followed by a photomultiplier, permitted the study of intensity variations in the OH bands and in the "atmospheric" O_2 bands (8640Å). A rather clear correlation between the intensity of this second band and that of the 5577Å line of [OI] was found. (Author)

Dufay, Maurice.
PHOTOELECTRIC STUDY OF THE SPECTRUM OF THE NIGHT SKY BETWEEN 0.7 AND 1.1 μ (Étude Photoelectrique du Spectre du Ciel Nocturne Entre 0.7 et 1.1 μ). [1961] [5]p. 8 refs.
Order from SLA $1.10 62-10137

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1957, v. 244, no. 3, p. 364-367 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Night sky, *Spectrographic analysis, Photoelectric cells, Radiation, Infrared filters, Instrumentation.

First experiments show that the 0.7 - 1.1 μ region of the spectrum of the night sky is accessible to rapid recording by means of a Cs-AG-O cell. (Author)

Oparin, A. I.
THE UNIVERSE AND LIFE (Vselennaya i Zhizn). 6 Nov 61 [24]p. JPRS: 10932.
Order from OTS or SLA $2.60 62-13335

Trans. of Priroda (USSR) 1961 [v. 50] no. 7, p. 5-12.

DESCRIPTORS: *Galaxies, Planets, *Space probes, *Space flights, Meteorites, Microorganisms, *Astrophysics, Moon, Mars, Venus, Hydrocarbons.

The development of heavenly bodies has undoubtedly come about in very diverse ways. Perhaps many highly perfect and complex forms of motion of matter which are not in the least identical to the earthly life and which we now do not even suspect exist in the infinite spaces of the Universe. However, among the infinite number of heavenly bodies, some, even if only a few, must have followed approximately the same paths of evolution as our planet. Therefore, we have no right to regard our Earth as the sole center of life. Basically, the problem of life on other worlds should not be the solution of the problem of the possibility of the existence of organism in these or other conditions, but the study of the courses of matter evolution on the various objects of the Universe. (Author)

Severnyĭ, A. B.
HET OPTREDEN VAN ZONNEVLAMMEN IN DE NEUTRALE PUNTEN VAN HET MAGNETISCHE VELD VAN DE ZON EN HET PINCH-EFFEKT (Appearance of Solar Flares in the Neutral Points of the Magnetic Fields of the Sun and the Pinch Effect) tr. by G.B.J. Overbeek. 38p. 21 refs. MTWL: 953. (Text in Dutch).
Order from OTS or ETC $2.61 61-17553
Trans. of Akademiya Nauk SSSR. Krymskaya Astrofizicheskaya Observatoriya. Izvestiya, 1958, t. 20.

DESCRIPTORS: *Magnetic pinch, Sun, Magnetic fields *Solar flares.

BEHAVIORAL SCIENCES

Berlioz, L.
STUDY OF THE REPRODUCIBILITY OF THE ITEMS OF A TEST (Étude de la Reproductibilité des Questions d'un Test). [1961] [30]p. 2 refs.
Order from SLA $2.60 61-20436

Trans. of Centre d'Études et Recherches Psychotechniques, Bulletin (France) 1955, v. 4, no. 4, p. 379-391.

DESCRIPTORS: Group dynamics, *Statistical analysis, Test methods, *Applied psychology, Attitudes, Sociometrics, *Factor analysis, Standards.

The Guttmanian notion of reproducibility is first defined in the special case of item-test relationships. A valid coefficient, whatever be the distribution of scores, is proposed and used to study the reproducibility of the 36 items of the Mechanical Test published by the Centre de Psychologie Appliquée de Paris (Applied Psychology Center of Paris). The influence exerted on this coefficient by the limitation of the test duration is examined. (Author)

Human Engineering

Rud', G. G.
WORK RATE AND FUNCTIONAL STATE OF ANALYZERS DURING WORK REQUIRING REAT AMOUNT OF PRECISION IN VISUAL, TACTILE, AND PROPRIOCEPTIVE CONTROL (Temp Raboty i Funktsional'noe Sostoyanie Analizatotorov pri Trude, Trebuyushchem Bol'shoi Tochnosti Zritel'nogo Osyazatel'nogo, i Propriotseptivnogo Kontrolya). 31 Aug 61 [14]p. JPRS: 10010.
Order from OTS or SLA $1.60 61-28054

Trans. of Zdravookhranenie (USSR) 1960, no. 5, p. 47-54.

DESCRIPTORS: *Human engineering, *Tactual perception, *Visual perception, Proprioception, *Fatigue (Physiology), *Mental fatigue.

Observations of the cortical stereotype of the work-act of workers in the adjustment and coil-winding shops of the Kishinev Plant "Microprovod" showed that fatigue which takes place at the end of the work day and work week in a type of work not connected with considerable physical exertion, but which requires considerable precision in analyzer functions manifests itself, first of all, in a retarded work rate without a simultaneous decrease in the accuracy of analysis. Moreover, this control becomes more perfect: the lability of the visual analyzer rises, the tactile discrimination is improved, and the proprioreceptivity becomes more precise. The greatest increase of time required for the completion of one operation takes

place at the end of the week. The monotonous work consisting of a small number of constantly repeated movements leads to a relatively rapid development of internal inhibition. The adaptation increase in precision of analysis which takes place in the wiring and adjustment workers during the work week is manifested only in the analyzers comprising the stereotype of the work act: tactile, visual, and motor; the aural analyzer does not participate in this stereotype and consequently plays no part in the adaptation process.

Sapozhnikova, R. G., Popova, N. M., and Korenevskaya, E. I.
ON THE WORK ROUTINE IN INDUSTRIAL TRAINING OF SCHOOL CHILDREN UNDERGRADUATES (K Voprosu o Rezhime Truda Shkol'nikov pri Proizvodstvennom Obuchenii). Reported at the All-Russian Congress of Hygienists and Sanitation Physicians (no. 1) Sep 60. 13 Sep 61 [11]p. JPRS: 10070.
Order from OTS or SLA $1.60 61-28306

Trans. of Gigiena i Sanitariya (USSR) 1961 [v. 26] no. 5, p. 28-33.

DESCRIPTORS: *Industrial training, *Children, *Students, Job analysis, Labor, Age.

Studies and observations showed that the most acceptable type of organization of industrial training from the hygienic point of view is that in the form of shops for unskilled workers. In these cases it is possible to organize the work routine and rest periods properly and to differentiate the work load taking into consideration the age, sex, and functional capacities of students. In the initial stage of industrial training in the ninth classes, in view of the small amount of training of the student's organism and consequently, the greater need of rest, it is expedient to accord students a brief rest-period for 10 to 15 minutes every 45 to 60 minutes of work. For students of the tenth classes it is possible to grant breaks after every two hours of work in order to prepare gradually for the transitions of students of the eleventh classes to the work routine of adult workers. (Extracted)

Personnel and Training

ELECTION OF FULL AND CORRESPONDING MEMBERS TO THE ACADEMY OF SCIENCES OF THE UKRAINIAN SSR. 20 Dec 61 [14]p. JPRS: 11749.
Order from OTS or SLA $1.60 62-15235

Trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1961, no. 5, p. 582-589.

DESCRIPTORS: *Scientific organizations, *Scientific personnel, Personnel, Selection

LABOR HYGIENE AND OCCUPATIONAL DISEASES, 1961, NO. 7: SELECTED TRANSLATIONS. 8 Sep 61 [38]p. 5 refs. JPRS: 10083.
Order from OTS or SLA $3.60 61-28518

Trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1961 [v. 5] no. 7, p. 11-16, 23-32, 41-43, 55-56, 58.

DESCRIPTORS: *Industrial medicine, *Labor, Personnel, *Physical fitness, Pathology, *Ultrasonic equipment, *Rare earths, *Particles, Fluoride poisoning, Adjustment (Psychology), Resistance, *Industrial training, *Air, *Ionization.

Contents:
Attempts to calculate the arduousness of work, by G. P. Konradi
Experience in the study of data of medical check-ups of adolescent apprentices, by S. E. Il'in
Some data on the occupational pathology of persons servicing ultrasonic power units, by N. N. Shatalov and others
The effect of fluoride dust of the rare earths on the body, by I. V. Roshchin
Scientific conference on the problem of adaptation, training and other methods of increasing the resistance of the body, by F. T. Agarkov
Is air ionization advisable in dusty industries? by B. B. Koyranskii.

BIOLOGICAL SCIENCES

BIOLOGY AND THE COSMOS. 17 Oct 61 [10]p. JPRS: 10553.
Order from OTS or SLA $1.10 61-28924

Trans. of Nauka i Zhizn' (USSR) 1961 [v. 28] no. 6, p. 6-9.

DESCRIPTORS: *Biology, Space flight, Spaceships, *Space environmental conditions, *Bacteria, Ionization, *Ionosphere, *Microbiology.

Contents:
The first voyage to the stars and the problems of space biology, by N. N. Zhukov-Verezhnikov
Microorganisms in the cosmos, by N. I. Rybakov.

FORTY YEARS OF SOVIET BIOLOGY (1917-57). 28 Aug 61 [42]p. JPRS: 9928.
Order from OTS or SLA $4.60 61-28047

Trans. of Akademiya Nauk SSSR. Izvestiya. Ser[iya] Biol[ogicheskaya] 1957 [v. 22] p. 649-673.

DESCRIPTORS: *History, *Biology, *Scientific organizations, Paleoecology, Plants, Microbiology, Histology, Embryology, Genetics, Biochemistry, Biophysics, Physiology, *Scientific research.

NOMINATIONS TO THE ACADEMY OF SCIENCES BELORUSSIAN SSR. 18 Dec 61 [8]p. JPRS: 11639.
Order from OTS or SLA $1.10 62-15217

Trans. from Sovetskaya Belorussiya (USSR) 1961, 30 Aug, p. 3.

DESCRIPTORS: *Scientific personnel, Professional personnel, Biology, Scientific research, Scientific organizations.

Nichyk, V. M. and Baraboy, V. A.
SYMPOSIUM ON CERTAIN PHILOSOPHICAL PROBLEMS OF MEDICINE AND NATURAL SCIENCE (Nekotorye Filosofskie Voprosy Meditsiny i Estestvoznaniya). 11 Sep 61 [10]p. JPRS: 9974.
Order from OTS or SLA $1.10 61-28069

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 2, p. 287-289.

DESCRIPTORS: Philosophy, *Medicine, Medical research, Scientific reports, *Biology, Biochemistry, Literature.

Book review.

Peleshchuk, A. P.
ALL-UNION SCIENTIFIC CONFERENCE OF INTERNISTS (NO. 12) [EREVAN, 5-7 OCT 60] (Vsesoyuznaya Nauchnaya Konferentsiya Terapevtov). 6 Oct 61 [7]p. JPRS: 10348.
Order from OTS or SLA $1.10 61-28776

Trans. of Vrachebnoe Delo (USSR) 1961, no. 1, p. 140-142.

DESCRIPTORS: *Conferences, *Medicine, Hospitals, Therapy, USSR.

Anatomy and Physiology

FORMATION AND DEVELOPMENT OF THE MOBILITY OF NEURAL PROCESSES IN ONTOGENY IN DOGS (Stanovlennya i Rozvytok Rukhomosti Nervovykh Protsesiv v Ontogenezi u Sobak). 1 Sep 61 [11]p. 10 refs. JPRS: 9967.
Order from OTS or SLA $1.60 61-28037

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 2, p. 159-164.

DESCRIPTORS: *Neurology, Growth, *Age factors, *Nervous system.

The greatest mobility of the nervous processes is observed in pups between 25 days and two to 2.5 months of age. After this, there is a reduction in the mobility of the basic nervous processes up to 2.5 to four months of age, after which the mobility of the nervous processes in pups remains approximately unchanged until ten months of age. Individual variations in mobility of the nervous processes in each group are the more marked the older the pups. Training of mobility of the nervous processes begins to have an effect at about four to five months of age. It manifests itself not only in a quicker reversal of the signal significance of stimuli but also in a reduction in the amplitude of individual variations in the experimental group of animals as compared with the controls. (Author)

WORKS OF THE INSTITUTE OF HIGHER NERVOUS ACTIVITY, PHYSIOLOGICAL SERIES, 1959, VOL. 3, tr. by M. Roublev. 1961, 263p. PL-480 HEW.
Order from OTS $2.75 61-31018

Trans. of Akademiya Nauk SSSR. Institut Vysshei Nervnoi Deyatel'nosti. Trudy. Seriya Fiziologicheskaya, 1959, v. 3.
##Another trans. of p. 121-135 is available from OTS $0.75 as 60-11036, JPRS(NY)-L-1074, 20 Nov 59, 23p.

DESCRIPTORS: *Nervous system, *Reflexes, *Conditioned reflex, Pathology, *Brain, Excitation, Hypothalmus, Stimulation, Skin, Sensory perception, *Cerebral cortex, *Neuromuscular transmissions, Motor reactions, Respiration, *Bioelectronics, Inhibition, *Electroencephalography, *Auditory perception, *Visual perception, Acetophenones, Psychoneurosis, Ionization, *Radiation effects, Diphtheria, *Antigens, Pentyl radicals, Thiazines, Bromine, Caffeine, Blood, *Secretion, Digestive system, Dogs, Nerves, Sodium compounds, *Vitamins, *Sleep, Hypothermia, Stomach, Glands

Contents:
The swallowing dominant and the elaboration of a conditioned reflex on the basis of the swallowing reflex, by G. D. Kuznetsova
Disorders and recovery of higher nervous activity after creation of a center of excitation in the hypothalamic region of a rabbit's brain, by R. A. Pavlygina
A dominant to a fading electrocutaneous stimulation and its effect on defense conditioned reflexes, by L. S. Podsosennaya
A pressure-produced dominant center in the cerebral cortex of a rabbit, by M. A. Ryabinina
The correlations of the motor and respiratory components of the defense conditioned reflex in rabbits, by R. A. Pavlygina
The bioelectrical activity of various levels of the cerebral cortex during the elaboration of a defense conditioned reflex to arrhythmic stimulation in rabbits, by I. N. Knipst
The reflection of inhibition in the electroencephalogram of animals, by L. Ya. Golubeva
The electroencephalographic study of the cortical end of the human visual and auditory anzlysors, by N. A. Gavrilova
Electrophysiological study of human higher nervous activity during the action of complex stimuli and the formation of a conditioned reflex to them, by N. A. Gavrilova

Adamenko, M. P.
A NEW VARIATION OF THE METHOD OF ARTIFICIAL BLOOD CIRCULATION (Novyi Variant Metodu Stuchnoho Krovoobigu). 25 Sep 61 [9]p. 11 refs. JPRS: 10214.
Order from OTS or SLA $1.10 61-28405

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 4, p. 563-566.

DESCRIPTORS: *Physiology, *Blood circulation, *Artificial heart, Heart.

A new variant of a method of artificial circulation is described, involving the use of a single pump of an autojector which withdraws venous blood from the experimental dog and transfers it to the venous system of a donor dog; transferral of the arterial blood into the arterial system of the experimental dog results from the work of the heart of the donor. Experimental data confirm the conclusions of S. S. Bryukhonenko and his associates and students regarding the possibility of complete resuscitation of dogs after clinical death lasting 11 to 17.5 minutes as timed from the last expiration. (Author)

Fudel'-Osipova, S. I., Emets, G. L., and Burychenko, A. V.
ELECTROPHYSIOLOGICAL AND HISTOLOGICAL CHARACTERISTICS OF THE JOINT CAPSULE' RECEPTORS (Elektrofizologichna ta Gistomorfologichna Kharakterystyka Retseptoriv Sugloba). 1 Sep 61 [8]p. 15 refs. JPRS: 9970.
Order from OTS or SLA $1.60 61-28058

Trans. of Fiziologichnyi Zhurnal(USSR) 1961, v. 7, no. 2, p. 197-205.

DESCRIPTORS: Physiology, *Joints (Physiology), Histology, *Nerves, Tissues (Biology)

The capsule of the knee joint has numerous myelinated and unmyelinated nerve fibers. The nerve fibers entering the capsule have ramification of the dendritic and bush-shaped types which terminate in different nervous structures: loops, free endings composed of unmyelinated fibers, etc. Within a limited number of these there are complex nerve endings of the Ruffini and Pacinian corpuscular types. In response to mechanical, thermal and nociceptive stimulations of the capsule, the nerve showed discharges of impulses of varying character and duration. Tactile stimulation of the capsule induced in the nerve a flow of impulses of different amplitude and frequency. With increase in the strength of the stimulus, there was an increase in the frequency of the impulses. In this, the highest frequency was seen with impulses of ten to 12 mcv. With marked deformation of the capsule, there arose high-voltage impulses (36 to 42 mcv) which were due to the encapsulated corpuscles of the Pacinian type and which rapidly adapted. A high frequency or impulses, much higher than with tactile stimulation, was seen with nociceptive stimuli. The highest frequency with this type of stimulation was exhibited by impulses of 18 to 24 mcv range. All impulses arose only during the action of the nocicpetive stimulus. (Author)

Kostyuk, P. G. and Semenyutin, I. P.
PECULIARITIES OF THE COURSE OF THE EXCITATION PROCESS IN VARIOUS PARTS OF THE MOTOR NEURON (Osoblyvosti Perebigu Zbudzhennya v Riznykh Dilyankakh Rukhovoho Neirona). 1 Sep 61 [22]p. 15 refs. JPRS: 9968.
Order from OTS or SLA $2.60 61-28060

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v.7, no. 2, p. 165-176.

Portions of this report will not reproduce well.

DESCRIPTORS: *Nerves, *Physiology, Cells (Biology) Excitation.

A comparison of the results of recording potentials with microelectrodes directly from the cell body and from the intracord myelinated segment of the axon of motor neurons of the spinal cord exposed to single, pared, and rhythmic orthodromic (synaptic) and antidromic impulses showed the course of stimulation in the different parts of the cell. The myelinated portion of the axon could reproduce the rhythm of impulses (usually with much reduction in amplitude) to 900/second. The body of the motor neuron could, only in exceptional cases and for brief periods of time, generate impulses up to 100/sec; in most cells the frequency did not exceed 50/sec. This difference is related to the greater duration of the action potential and of the refractory period in the body, especially with the appearance in it after the action potential of prolonged trace hyperpolarization which is absent in the axon. Between the myelinated part of the axon and the cell body there is a part of the cell that may conduct impulses without change in the rhythm up to 500 or 600/sec.

Mikhel'son, M. Ya., Savateev, N. V. and others.
THE PHYSIOLOGICAL SIGNIFICANCE OF ACETYLCHOLINE IN THE CENTRAL NERVOUS ACTIVITY OF MAN AND ANIMALS: THE ROLE OF ACETYLCHOLINE IN CENTRAL NERVOUS ACTIVITY. [1961] 9p.
Order from OTS or SLA $1.10 61-28831

Trans. of mono. Fiziologicheskaya Rol' Atsetilkholina i Izyskanie Novykh Lekarstvennykh Veshestv (The Physiological Role of Acetylcholine and the Search for New Drugs) Leningrad, 1957, p. 25-33.

DESCRIPTORS: Physiology, *Acetylcholines, Nervous system, Man, Animals, Cholines, Spinal cord.

Facts are cited that support the view that there are cholinergic neurons and cholinergic synapses in those areas of the brain where higher nervous activity is located. It may be that these cholinergic structures are located not only in the cerebral cortex, but also in the ascending part of the reticular formation that exerts a tonicizing influence on the cortex.

Nadezhdin, V. N.
THE INTRA-ORGANIC DISPOSITION OF LYMPH VESSELS IN MUSCLES, TENDONS AND FASCIAE. 25 Sep 61 [19]p. 19 refs. NIH no. 9-16-61.
Order from OTS or SLA $1.60 61-28685

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1957, v. 34, no. 1, p. 90-99.

DESCRIPTORS: *Lymph, Reticulo-endothelial system, *Muscles, *Tendons, *Tissues (Biology), Body, Legs, Body fluids, Capillaries, Injectors, Fluoroscopes, Biological stains, Histology.

In his studies on the disposition of the lymphatics in tendons, fasciae and muscles the author injected with Herot's blue paste 76 lower extremities obtained from dead fetuses, infants, children and adults. The lymphatic capillaries which accompany the blood vessels--as established on the basis of his findings--run through the layers of connective tissue passing between the fibrils which constitute it, and continue into the external perimysium and tendons. Within the tendon, the lymphatics form two systems: a deep capillary bed, and a superficial capillary bed, which are interconnected by anastomoses. The fascia contains from one to three capillary beds, which are also interconnected. Each of them displays special local characteristics depending on those of the corresponding blood vessels and organs. The lymphatic systems of adjacent organs are linked with each other by lymphatic capillaries and larger caliber lymphatics passing directly from one to another. (Author)

Orlov, E. S.
OVER DE SPECIFITEIT VAN DE AGGLUTINATIE-REACTIE EN DE "REAGEERBUISJES" BRUCELLOSE (The Specifity of the Agglutination-reaction and the 'Test Tube" brucellosis). 15p. MTWL: 907. (text in Dutch).
Order from OTS or ETC $1.85 61-17599

Trans. of Veterinariya (USSR) 1954, no. 11, p. 34-39.

DESCRIPTORS: *Brucellosis, Hemagglutinins, Tests.

Pal'gova, L. E.
INTEROCEPTIVE REFLEXES FROM THE PERICARDIUM AND PLEURA TO THE CIRCULATORY SYSTEM IN ONTOGENESIS (Interotseptivnye Refleksy s Perikarda i Plevry na Sistemu Krovoobrashcheniya v Ontogeneze). 28 Aug 61 [13]p. 14 refs. JPRS: 9949.
Order from OTS or SLA $1.60 61-28052

Trans. of Akademiya Nauk Kazakhskoi SSR, Alma Ata. Izvestiya. Seriya Meditsiny i Fiziologii, 1960, no. no. 1(13) p. 7-13.

DESCRIPTORS: *Pericardium, Embrology, *Pleura, *Reflexes, *Autonomic nervous system.

In the pericardium and pleura of puppies within the first few days of the postnatal period, there are active mechanoreceptors stimulation of which may change reflectorily the level of arterial pressure and cardiac activity. The pericardium and pleura represent a definite reflexogenic zone not only in the adult animals; according to our findings, it starts functioning during the early postnatal period of puppies, the sensitivity of the zone of pericardial layers remaining unaltered with the growth of the animal, whereas the sensitivity of the pleura undergoes changes. In puppies during the first postnatal days the reflex from the pleura on the blood pressure and heart is more pronounced; it weakens in the course of time. (Author)

P'ei, Tuan-ching, Nan, Kuo-chu, and Liu, Li-ch'un.
A STUDY OF THE INSULIN-INACTIVATING SUBSTANCES OF THE LIVER. 21 Sep 61 [12]p. 10 refs. JPRS: 4983.
Order from OTS or SLA $1.60 61-28567

Trans. of Sheng Li Hsüeh Pao (Chinese People's Republic) 1960, v. 24, no. 2, p. 136-140.

DESCRIPTORS: *Liver, *Insulin, *Butyl radicals, *Toluenes, Drugs, *Hypoglycemia

In our study of the action of the insulin-inactivating substances of the livers of large white rats by perfusing the liver in situ, when a certain amount of insulin passed through the liver, it might lose its activity. This proves that the liver has an inactivating action on insulin, and that these insulin-inactivating substances are closely related to the liver tissues. Such substances could not be carried away from the liver by the perfusate. After the insulin passed through the liver, the action of the insulin-inactivating substances of the liver was weakened. When the animals were rendered hypoglycemic by tolbutamide, the action of the insulin-inactivating substances of the liver was the same as that of the liver of normal animals, Therefore we conclude that there is no relation between the hypoglycemic action of tolbutamide and the insulin-inactivating substances of the liver. (Author)

Spasokukots'kyi, Yu. O.
THE SIGNIFICANCE OF THE IDEAS OF [A. A.] BOGOMOLETS ON THE FURTHER DEVELOPMENT OF THE STUDY OF LONGEVITY AND AGING.
26 Oct 61 [15]p. JPRS: 10641.
Order from OTS or SLA $1.60 61-28891

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 3, p. 343-351.

DESCRIPTORS: *Age, Physiology, *Metabolism, *Tissues (Biology), *Regeneration, Cells (Biology), Blood transfusions, Biochemistry, Growth

O. O. Bogomolets pointed out that the process of aging is characterized by a loss of the capacity of the tissue to retain and utilize water. There is also a reduction in the assimilative processes, due to which the cells and tissues become overburdened with inadequate, ineffective micellae. All of this leads to a weakening of the capacities of the organism for biochemical regeneration of proteins and other substances. Bogomolets also developed a theory concerning the mechanism of transfused blood. Upon transfusion of blood, due to interaction of the colloids of the donor and the recipient, changes occur (colloidoclasia) which cause a complex biological reaction on the part of the organism to the transfusion of blood. Colloidoclastic disturbances in the tissues and the entire complex changes in the organism as a whole result in the liberation from the cells of the ineffective protein micellar particles, increasing thereby the capacity of the cells for biochemical regenerations, leading to an improvement in the functions of the hematoparenchymatous barrier, enhancing hemodynamics, and, giving rise to the active access to the tissues of essential substances including oxygen. Data are reported which indicate that the struggle for longevity is primarily a struggle for normal individual growth of the organism from the moment of fertilization of the egg to the end of the life cycle. (Extracted)

Biochemistry

Katsuki, Hirohiko.
STOFWISSELINGSFUNCTIES VAN BIOTINE. (1.) DE INVLOED VAN BIOTINE OP DE ORGANISCH-ZUUR OMZETTING VAN RICE-BLAST FUNGUS. (Metabolic function of biotin (1.). Effect of biotin on the organic acid metabolism of rice-blast fungus). 15p. 15 refs. MTWL: 833. (Text in Dutch).
Order from OTS or ETC $1.55 61-17381

Trans. of Nippon Kagaku Zasshi (Japan) 1955, v. 76, p. 941-944.

DESCRIPTORS: *Biotin, Metabolism, *Organic acids, *Fungi, Rice,

Khursin, M. Yu.
EFFECT OF ULTRASOUND ON THE NUCLEIC ACID CONTENT IN THE TISSUES OF THE ANIMAL ORGANISM (Pro Vplyv Ul'trazvuku na Vmist Nukleyinovykh Kyslot u Tkanynakh Tvarynnoho Orhanizmu). 11 Sep 61 [10]p. 12 refs. JPRS: 9972.
Order from OTS or SLA $1.10 61-28253

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 2, p. 266-270.

DESCRIPTORS: *Tissues (Biology), Ultrasonics, *Nucleic acids, *Histology, Acids.

Ultrasound at an intensity of 2 w/sq cm or more, over a 10-min period and in stationary contact with the tissue, causes a regular reduction in the nucleic acid content of the testes of white rats. With increasing intensities, the loss of nucleic acids becomes more severe. Ultrasound at an intensity of 1 or 0.6 w/sq cm did not induce marked changes in the nucleic acid content.

Botany

Bolkhovitina, N. A.
PROBLEMS OF NOMENCLATURE: NAMES OF FOSSIL POLLEN AND SPORES IN KEEPING WITH THE INTERNATIONAL RULES OF BOTANIC NOMENCLATURE. [1961] 20p. (illus. omitted).
Order from OTS or SLA $1.60 61-23968

Trans. of [Paleontologicheskii Zhurnal] (USSR) 1960, no. 1, p. 118-127.

DESCRIPTORS: *Spores, *Pollen, Paleoecology, Geology, Classification, Plants.

Bordovsky, Frantisek.
PROCESS FOR VEGETATIVE MULTIPLICATION OF CULTIVATED USEFUL OR DECORATIVE TREES OF SHRUBS, tr. by J. B. 13 Oct 61, 3p. (3 figs. omitted).
Order from OTS or SLA $1.10 61-28954

Trans. of Czechoslovakian patent 76,678, cl. 45 c, appl. 9 Dec 46, protected from 15 Dec 47, pub. 15 June 48.

DESCRIPTORS: *Trees, Genetics, Growth, *Reproduction, Plants.

A cultivated shoot is placed in the ground, whereafter the individuals grown out of its buds, having struck roots, are separated from the mother plant behind the bud from which they grew, so that the mother plant remains preserved in the ground. The mother plant is placed in the ground at a moderate upward angle.

Kordyum, E. L.
CONFERENCE ON THE COORDINATION OF WORK ON THE PROBLEM "FLORA AND VEGETATION, THEIR HISTORICAL DEVELOPMENT, UTILIZATION, RECONSTRUCTION, AND PROPAGATION" (Narada po Koordynatsiyi Robit z Problemy 'Flora i Roslynnist', Yikh Istorychnyi Rozvytok, Vykorystannya, Rekonstruktsiya ta Zbagachennya). 13 Oct 61 [4]p. JPRS: 10477.
Order from OTS or SLA $1.10 61-28779

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1961, v. 18, no. 3, p. 113-114.

DESCRIPTORS: *Plants, Propagation, Growth, *Conferences.

Nolte, H. W. and Köhler, H.
PLANT DAMAGE IN NEMATODE ATTACK AND ITS CAUSES. [1961] 4p.
Order from SLA $1.10 62-10300

Trans. of Nachrichtenblatt für den Deutschen Pflanzenschutzdienst (Germany) 1952, n. s. v. 32, p. 24-28.

DESCRIPTORS: *Plants, *Nematodes, Fungus infections, Growth, Tissues (Biology)

Rakhmanina, A. T.
THE RHYTHM OF PLANT DEVELOPMENT IN SOME PHYTOCOENOSES OF THE TEREK-KUMA PLAIN AS RELATED TO ECOLOGICAL ENVIRONMENTAL FACTORS (Ritm Razvitiya Rastenii Nekotorykh Fitotsenozov Tersko-kumskoi Nizmennosti i Ekologicheskie Faktory Sredy) tr. by M. Slade. [1961] [29]p. (foreign text included) 6 refs. [CSIRO] Trans. no. 5388.
Order from OTS or SLA $2.60 61-28640

Trans. of Botanicheskii Zhurnal (USSR) 1960, v. 45, no. 1, p. 34-47.

DESCRIPTORS: *Plants, Ecology, Growth, *Climatic factors.

The article deals with the phenology of a number of plants belonging to four phytocoenoses, each of which is characterized ecologically, biologically and, partly,

phytocoenologically. The object was to study the effect of separate environmental factors on the developmental rhythm of plants. The general dependence of the phenology of flowering on the moisture content of the soil was revealed. The particular characteristics of the seasonal rhythms, are determined by the specific ecological conditions of different habitats. Thus, the different life forms and the different phenological cycles, as well as the character of the water supply in a grassland community are determined by the relief, by the level of the ground waters, and by the salts content of the soil. The differences in the phenological cycles are also determined by the different depth of penetration of the root systems into the soil and by the different character of the water supply. Thus, the onset of each of the successive developmental stages takes place at different dates in the plants with different root systems and in the plants growing in habitats with different levels of the ground waters. All this made it possible to distinguish four major ecological groups on the basis of the differences in the beginning of flowering. Each of these groups has specific phenological characteristics.

Sinskaya, E. N., ed.
FLORA OF CULTIVATED PLANTS OF THE USSR. XIII: PERENNIAL LEGUMINOUS PLANTS. PT. I: MEDIC, SWEETCLOVER, FENUGREEK, tr. by N. Landau. 1961, 661p. 226 refs. PL-480 Agr.
Order from OTS $6.75 60-51198

Trans. of mono. Kul'turnaya Flora SSSR. XIII: Mnogoletnie Bobovye Travy. Vyp. I: Lyutserna, Donnik, Pazhitnik, Moscow/Leningrad, 1950, 526p.

DESCRIPTORS: *Plants, *Classification, Ecology, Growth, Reproduction, Pollen, Suds, Diseases.

This book contains articles on the medics, sweet clover and fenugreek. The extent of each corresponds to the economic importance of the respective culture. The large extent of the studies dealing with medic and sweet clover is accounted for by the fact that the varietal and natural forms of these cultures are centered in our country. We have tried to make the present edition serve not only as a guide to plant identification and classification of cultivated plants, but also as a summary of the most practical information concerning the more important aspects of their biology. (Extracted from Soviet editor's preface)

Medical Specialties and Equipment

Grigor'eva, N. N.
FOR CONSISTENT IMPROVEMENT IN CHILDREN'S HEALTH PROTECTION (Nastoichivo Uluchshat' Okhranu Zdorov'ya Detei). 29 Sep 61 [12]p.
JPRS: 10262.
Order from OTS or SLA $1.60 61-28784

Trans. of Sovetskoe Zdravookhranenie (USSR) 1961 [v. 20] no. 5, p. 3-9.

DESCRIPTORS: *Public health, *Children, Medical personnel.

Achievements and goals are discussed.

Polyak, B. L.
A METHOD OF DETERMINING THE CONCENTRATION OF FLUORESCEIN IN THE AQUEOUS HUMOUR OF THE EYE WITHOUT ITS REMOVAL (BIOCOLORIMETRY) (Metod Opredeleniya Kontsentratsii Fliourestseina v Kamernoi Vlage Glaza Bez ee Izvlecheniya (Biokolorimetriya)). [1961] 4p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-15373

Trans. of Vestnik Oftal'mologii (USSR) 1955, v. 34, no. 4, p. 21-22.

DESCRIPTORS: *Ophthalmology, *Eye, *Body fluids, *Fluorescent dyes, Colorimetry, *Colorimetric analysis, Medical equipment, Diagnosis.

Microbiology

ACTA MICROBIOLOGICA SINICA, 1959, VOL. 7, NO. 1/2: TABLE OF CONTENTS [AND SELECTED TRANSLATIONS]. Research in Microbiology in Communist China. 10 Nov 61 [112]p. 105 refs.
JPRS: 11027.
Order from OTS or SLA $9.60 62-13440

Trans. of Wei Sheng Wu Hsüeh Pao (Chinese People's Republic) 1959, v. 7, no. 1/2, p. 16-30, 32-38, 40-41, 43-58, 60-74.

DESCRIPTORS: *Microbiology, *Filariasis, *Mosquitoes, *Salmonella, Salmonella infections, *Encephalitis viruses, Cattle, Immunology, Encephalitis, *Rabies, *Virus vaccines, Metabolism, *Streptomyces, Aureomycin, Carbon compounds, Nitrogen compounds, Biochemistry.

Contents:
Report on Malayan Filariasis and the mosquito vectors in Wu-Ch'Ang, Hupeh, by Wu Chia-chu
A survey of Bancroft's Filariasis at Ts'ung-Hua, Kwangtung, by Chu Shih-hui and others
A comparative study of certain biological properties of Salmonella Tyhimurium Bacteriophages of various degrees of virulence, by Li Huan-lou
A survey on viremia and latent infection of type-B Encephalitis in cattle, by Wu Chiao-ju and Wu Shu-yin
The natural infection of chickens with type-B Encephalitis, by Wu Chiao-ju and others
A study of the biological properties of type-B Encephalitis virus, by Li Ho-min and Yu Yun-hsin
An experimental study on the immune mechanism of forest Encephalitis (the resistance of immunized white mice in relation to the concentration of neutralizing antibodies in their brain suspensions and Sera, by Huang Yun Ch'eng and Wu Wen-huan
A comparative study on rabies vaccines prepared from brains of sheep, rabbits, and mice, by Hsu Hsiuliang and others
Effect of carbonaceous and nitrogenous compounds on the metabolism of streptomyces Aureofaciens, by Chang Shu-lien.

Annagiev, A. A.
A NEW METHOD OF ARTIFICIALLY INFESTING SHEEP WITH LISTERIA (Novyi Metod Iskusstvennogo Zarazheniya Ovets Listeriozom). 6 Sep 61, 2p. Trans. V-1729.
Order from OTS or SLA $1.10 61-28449

Trans. of Veterinariya (USSR) 1961, v. 38, no. 5, p. 43.

DESCRIPTORS: *Sheep, *Listeria, Bacteria.

Listeria cultures were administered to the submucous membrane of the upper lip. The listerellal strain was titrated and the minimum lethal dose for the sheep was determined (20 billion microbe bodies). The six rams, 6-7 months old, died in 17-20 days after the infestation (basically from the listerellal sepsis). In the dissection of carcasses changes were found similar to changes in animals, which fell ill under natural conditions.

Dedié, Kurt.
THE ACID SOLUBLE ANTIGENS OF ERYSIPELOTHRIX RHOSIOPATHIAE. [1961] 10p.
Available on loan from SLA 61-18697

Trans. of a German language article from an unidentified source, n. d.

DESCRIPTORS: *Swine erysipelas, *Actinomyus, *Antigens, Precipitation, Complement, *Vaccines

Two serological variants, A and B, of the erysipelas incite, Erysipelothrix rhusiopathiae, are described which are characterized by a variant-specific acid-soluble antigen. In some strains these antigens are lacking. The antigens are proven by precipitation, agglutination and compliment fixation. For production of killed vaccines after Traub only strains of group B are suitable. (Author)

Shamis, D. L.
ACHIEVEMENTS IN TECHNOLOGICAL AND AGRICULTURAL MICROBIOLOGY (Dostizheniya Tekhnicheskoi i Sel'skokhozyaistvennoi Mikrobiologii). 10 Aug 61 [17]p. JPRS: 9910.
Order from OTS or SLA $1.60 61-27760

Trans. of mono. Nauka Sovetskogo Kazakhstana 1920-60 (Science of Soviet Kazakhstan 1920-60) Alma-Ata [1960] p. 490-504.

DESCRIPTORS: *Agriculture, *Microbiology, *Yeasts, Wines, Vitamins, Distilling plants, *Virus diseases, Plants.

Syurin, V. N.
PROBLEM OF ACTIVE PROPHYLAXIS OF VIRUS DISEASES OF ANIMALS AND WAYS FOR ITS SOLUTION (Problema Aktivnoi Profilaktiki Virusnykh Zabolevanii Zhivotnykh i Puti Ee Resheniya). 22 Aug 61, 24p. 59 refs. Trans. V-1724.
Order from OTS or SLA $2.60 61-28444

Trans. of Veterinariya (USSR) 1961, v. 38, no. 6, p. 36-42.

DESCRIPTORS: *Veterinary medicine, *Virus diseases, *Animals, *Bacterial vaccines.

Wienberg, G. G.
PASSIVE ANAEROBIOSIS AND MICRO-AEROPHILE METABOLISM OF INVERTEBRATES, tr. by Z. D. Knowles. 6 Jan 50, 36p. (refs. omitted).
Order from OTS or SLA $3.60 61-28109

Trans. of Uspekhi Sovremennoi Biologii (USSR) 1948, v. 25, no. 1, p. 107-122.

DESCRIPTORS: *Bateria, *Microbiology, Metabolism, Ecology, *Aerobiology, *Anaerobiology, Oxygen consumption.

Zhumatov, Kh. Zh.
FUNDAMENTAL PROBLEMS OF THE DEVELOPMENT OF THE SCIENCE OF VIROLOGY IN KAZAKHSTAN (Osnovnye Voprosy Razvitiya Ucheniya o Virusakh v Kazakhstane). 10 Aug 61 [21]p. JPRS: 9911.
Order from OTS or SLA $2.60 61-27759

Trans. of mono. Nauka Sovetskogo Kazakhstana 1920-60 (Science of Soviet Kazakhstan 1920-60) Alma-Ata [1960] p. 505-523.

DESCRIPTORS: *Microbiology, *Virus diseases, Preventive medicine, Influenza viruses, Influenza vaccines, Hepatitis virus, *Cytochemistry.

Neurology and Psychiatry

NEUROLOGICAL STUDIES INVOLVING SIGHT AND TOUCH ANALYSIS. 27 Sep 61 [60]p. 14 refs. JPRS: 8952.
Order from OTS or SLA $5.60 61-28560

Trans. of Akademiya Pedagogicheskikh Nauk RSFSR. Doklady, 1960, no. 4, p. 73-76, 87-91, 93-100, 105-108.

DESCRIPTORS: *Neurology, *Eye, *Skin, *Nervous system, *Conditioned reflex, *Sensitivity, Vision, Light adaptation, Light, *Tactual perception, *Visual acuity, *Sensory perception, Children.

Contents:
Reaction time and the strength of the nervous system.
1. Typological differences in the realization of the "Law of Force" during the variation of the stimulus intensities, by V. D. Nebylitsyn
The effect of weak light stimuli on the sensitization of visual analyzers, by O. P. Baranovskaya
Concerning the problem of the interaction of the light-sensitive elements, by V. I. Kopanev
A comparative analysis of touch and sight.
5. Simultaneous intersensory comparison of form in pre-school age, by T. V. Lavrent'eva and A. G. Ruzskaya.

Folch-Pi, Jordi, ed.
CHEMICAL PATHOLOGY OF THE NERVOUS SYSTEM. Jan 62, 720p.
Order from PP $20.00

Trans. of mono. International Neurological Symposium (no. 3) held at Strasbourg, France, n.d.

DESCRIPTORS: *Nervous system, Pathology, Biochemistry, Metabolism, Diseases, *Mental diseases.

Kleist, K.
SENSORY APHASIA AND AMUSIA: THE MYELOARCHITECTONIC BASIS, tr. by F. J. Fish and J. B. Stanton. Jan 62, 63p.
Order from PP $5.00

Trans. of unidentified German mono., n.p., n.d.

DESCRIPTORS: *Speech disorders, *Neuromuscular transmission, *Brain, *Spinal cord, Sensory perception, *Music, *Deafness, Cerebral cortex, Neurology, Diseases.

Pathology

SELECTIONS ON CHINESE TRADITIONAL MEDICINE. 1 Sep 61 [43]p. 2 refs. JPRS: 4927.
Order from OTS or SLA $4.60 61-28044

Trans of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh [Ch'eng Chiu] Lun Wen Chi [A Collection of Papers on the Medical Sciences in Commemoration of the Tenth Anniversary of the Founding of Our Country] v. 1, Peiping, Dec 59, p. 345-365.

DESCRIPTORS: *Medicine, China, Medical research, Therapy, *Influenza viruses, Infections, *Diseases, *Hepatitis, *Suppurative infections, *Uterus, *Orthopedics, Dislocations, *Bone fracture, *Blood vessels, Pathology.

Contents:
Traditional medical research on treatment of influenza
Traditional medical research on treatment of infectious hepatitis
Traditional medical research on treatment of fissurated ulcer of cervix uteri, by Chang Hsi-yueh
Traditional medical research on treatment of hemorrhoids and anal fistulae
Traditional medical research on treatment of bone fractures and dislocated joints.

Al'pern, D. E.
BIOCHEMICAL FACTORS IN THE PATHOGENESIS OF INFLAMMATION (Biokhimicheskie Faktory v Patogeneze Vospaleniya) tr. by J. J. Oliver. [1961] [26]p. 110 refs. [NIH]-43.
Order from OTS or SLA $2.60 62-15138

Trans. of Arkhiv Patologii (USSR) 1956, v. 18, no. 4, p. 3-15.

DESCRIPTORS: *Biochemistry, *Inflammation, Pathology, *Nervous system, Nucleic acids, Nucleoproteins, Adenine derivatives, Enzymes, Hormones, Leucocytes, Phagocytosis, Metabolism.

Through an analysis of the research reports since 1910 and the author's own studies over a number of years, the factors in the pathogenesis of inflammation that need further study are outlined. Inflammation is considered as both a local and a general reaction. The combined biochemical, morphological and physiological phenomena at each stage of the process should be studied in relation to the reactions of the regulatory systems. Such morphological changes as increased permeability, leucocyte emigration with perivascular infiltration and phagcytic reactions are dependent upon the organic products of disturbed metabolism. These relationships are in need of further biochemical study, particularly in regard to the products of nuclein metabolism.

Berdybaev, U. B. and Omarov, M. O.
FORTY YEARS OF DERMATO-VENEROLOGY IN KAZAKHSTAN. 9 Jan 62 [7]p. JPRS: 11865.
Order from OTS or SLA $1.10 62-15381

Trans. of Vestnik Dermatologii i Venerologii (USSR) 1961 [v. 35] Sep. p. 80-83.

DESCRIPTORS: History, *Skin, *Diseases, *Venereal diseases, Therapy, Preventive medicine, Public health.

Derman, G. L.
PATHOLOGICAL ANATOMY OF HYPERTENSION (Patologicheskaya Anatomiya Gipertonicheskoi Bolezni). [1961] [39]p. 111 refs. [NIH]-29.
Order from OTS or SLA $3.60 62-15144

Trans. of Arkhiv Patologii (USSR) 1957, v. 19 [no. 3] p. 3-15.

DESCRIPTORS: Pathology, *Hypertension, Anatomy, *Circulatory system, Kidneys, Endocrine glands, *Nervous system, Liver, Spleen, Intestine, Eye.

The morphological changes associated with hypertension are described under the general subject headings of the cardiovascular system, the kidneys, the endocrine glands, the central nerve system, the liver the spleen, the intestinal tract, and the eye. These descriptions are based on a survey of the literature and observations of tissue sections received at this institution during the past 10 years.

Golovin, D. I.
METAPLASIA OF EPITHELIAL TISSUE (K Probleme Metaplazii Epitelial'nykh Tkanei) tr. by B. F. Toms. [1961] 25p. 42 refs. [NIH]-14.
Order from OTS or SLA $2.60 62-15151

Trans. of Arkhiv Patologii (USSR) 1957, v. 19 [no. 3] p. 15-25.

DESCRIPTORS: *Epithelium, *Tissues (Biology), Growth, Regeneration, Genetics, Age, Embryology, Pathology.

A review of the literature (Russian) shows that metaplasia is primarily the adaptation of tissue to change environmental conditions. The ability of tissues to undergo metaplasia is firmly established by evolution. There are several forms of metaplasia in the epithelium - connective tissue system. These forms are found in cases of inflammation, vitamin A deficiency, hormone disturbances and cancer. The extent of the morphogenetic potencies of tissues and the limits of metaplasia depend (1) the hereditary conservatism of a given epithelium (2) the phylogenetic age of the tissue,(3) the source from which it is derived, and (4) the tissue's conditions of existence which undermine this conservatism to varying extents.

Gonzalo, Gutierrez T., Benavides, Lazaro and others.
IMMUNOLOGIC SURVEY IN CHILDREN LIVING IN MEXICO, D. F. 1. SALMONELLA (S. TYPHOSA) ANTIBODIES. [1961] 8p. (7 refs. omitted)
Order from SLA $1.10 61-20024

Trans. of Asociaçion de Investigaçion Pédiatrica, Hospital Infantil de Mexico, meeting of 9-10 June 61. [Proceedings] p. 161-171.

DESCRIPTORS: *Immunology, *Children, *Salmonella infections, *Typhoid, Antigens, Antibodies, Public health, Housing, Mexico.

Krasnogorskii, N. I.
NEW INVESTIGATIONS ON STUDYING THE SPEECH ACTIVITY OF CHILDREN (Nove Issledovaniya po Izucheniyu Rechevoi Deyatel'nosti u Detei). [1961] 9p.
Order from OTS or SLA $1.10 62-15321

Trans. of Voprosy Patologii Rechi (USSR) 1959, v. 32, no. 81, p. 10-14.

DESCRIPTORS: *Speech, *Children, Reaction (Psychology) *Brain, *Cerebral cortex, Growth, Stimulation, Speech disorders.

A study of child speech at different periods of the ontogenesis has revealed that speech reactions are conditioned reflexes formed according to the laws of organization for temporary connections. They develop in children through imitation; they are fortified and made automatic through reflex repetition. Each verbal integrator has its own natural, individual, functional structure and closed sphere of generalization acquired by the child in the process of speech ontogenesis, into which strictly specific verbal stimuli enter. Beyond the limits of this sphere the excitability of the brain is lower than the threshold for stimulation. The cerebral cortex consists of similar structures of speech function which are sufficiently stable to keep their wholeness. The inclusion of a work-generalizer of one or another degree of generalization into the flow of speech creates in it a degree of generalization appropriate to the level of the integrating generalizer.

Lebedinskii, M. S.
CURRENT PROBLEMS OF THE CLINICAL ASPECTS OF SPEECH DISORDERS (Aktual'nye Voprosy Kliniki Rechevykh Narushenii). [1961] 18p.
Order from OTS or SLA $1.60 62-15324

Trans. of Voprosy Patologii Rechi (USSR) 1959, v. 32, no. 81, p. 15-22.

DESCRIPTORS: *Speech disorders, Diseases, *Diagnosis, Muscles, Auditory perception.

(See also: 62-15321)

Levina, R. E.
DISORDERS IN DEVELOPMENT OF SPEECH ACTIVITY IN CHILDREN (Narusheniya Razvitiya Rechevoi Deyatel'nosti u Detei). [1961] 11p.
Order from OTS or SLA $1.10 62-15323

Trans. of Voprosy Patologii Rechi (USSR) 1959, v. 32, no. 81, p. 23-27.

DESCRIPTORS: *Speech disorders, *Children, Speech, Sound, Auditory perception, Pathology, *Diagnosis, Language, Vocabulary, Social communication.

Marchuk, P. D.
SCIENTIFIC CONFERENCE ON THE PROBLEM OF GERONTOLOGY AND GERIATRICS (Naukova Konferentsiya z Problemy Gerontologiya i Geriatriya). 25 Sep 61 [7]p. JPRS: 10213.
Order from OTS or SLA $1.10 61-28404

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 4, p. 571-572.

DESCRIPTORS: *Scientific organizations, *Age, Physiology, Pathology, Diseases, Medical research, Conferences.

Mashkov, A. V.
ANTHRAX: LECTURE AIDS. 14 Aug 61 [32]p. JPRS: 4873.
Order from OTS or SLA $3.60 61-27924

Trans. of mono. (booklet) Sibirskaya Yazva (Materialy v Pomoshch Lektoru, Moscow, 1958, 35p.

DESCRIPTORS: *Anthrax, *Education, Etiology, Pathology, Preventive medicine, Veterinary medicine, Cattle, Immunization, Diagnosis, Therapy, *Training, Students, *Instructors.

Contents:
Lecture materials
What causes anthrax and how humans are infected with it
How the disease progresses in humans
Measures for preventing the disease in humans

How anthrax runs its course in animals
How animals are infected with anthrax
Measures for preventing infection of livestock
Methodological instructions
Model lecture plan
Appendix
Combatting anthrax
Pathological anatomy
Pathogenesis
Immunity
Diagnosis
Treatment

Nevenic, V. and Markovic, D.
THE GOAT AS AN INTERMEDIATE HOST OF TAENIA SERIALIS GERVAIS 1847 (Kozo Kao Prelazni Domacin za Taenia Serialis) tr. by Simeon Pribicevic. 1961, 5p. 3 refs. PL-480 Agr.
Order from OTS $0.50 60-21623

Trans. of Acta Veterinaria (Yugoslavia) 1951, v. 1, no. 1, p. 128-131.

DESCRIPTORS: *Goats, Parasites, *Tapeworms, Dogs, Morphology, Growth, Reproduction, Disease carriers, Tissues (Biology), Muscles, Heart.

In three out of several thousand goats slaughtered during January 1950 at the Beograd slaughterhouse, Multiceps serialis was found in the following locations: connective tissue near left kidney, the left heart atrium, and the connective tissue among muscles above the hock joint of the left hind leg. Judging from the relatively high percentage of the larva in the goat, which is not the main intermediate host of T. serialis, it can be concluded that this tapeworm is not rare in dogs in areas from which the goat carriers of M. serialis originate. These areas are Macedonia, AO Kosovo and Metohija. (Author)

Nikolaev, B. P.
ON A FOURTH SPECIES OF MALARIAL PARASITE OF MAN (PLASMODIUM OVALE) AND ITS DISCOVERY IN THE USSR, tr. by Z. D. Knowles. 2 Jan 52, 15p. 26 refs.
Order from OTS or SLA $1.60 61-28117

Trans. of Zoologicheskii Zhurnal (USSR) 1951, v. 30, no. 3, p. 211-216.

DESCRIPTORS: *Malaria, *Plasmodium, *Classification, Diseases, *Parasitology, Parasites

Sharlai, R. I.
CANCER OF THE INTERNAL ORGANS: CHAPS. 2-3 AND 10. 6 Oct 61 [52]p. JPRS: 10317.
Order from OTS or SLA $5.60 61-28732

Trans. of mono. Rak Vnutrennikh Organov, Khar'kov, 1960, p. 20-47, 48-57, 180-197.

DESCRIPTORS: *Neoplasms, *Etiology, *Hormones, Vitamins, Therapy, Chemotherapeutic agents, *Cancer research.

Contents:
The role of certain factors in the development of cancer
Brief data about the etiology and pathogenesis of malignant tumors
Biological, chemical, antibacterial and other non-surgical methods of treating malignant tumors.

Shcherbakova, M. G. and Khelimskii, A. M.
EXPERIMENTAL VITAMIN E DEFICIENCY AS A MODEL OF PROGRESSIVE MUSCULAR DYSTROPHY IN MAN [AND] THE PROBLEM OF DIFFERENTIAL DIAGNOSIS OF AGE AND PATHOLOGICAL CHANGES IN THE PINEAL GLAND. 17 July 61 [23]p. 68 refs. JPRS: 9701.
Order from OTS or SLA $2.60 61-27194

Trans. of Arkhiv Patologii (USSR) 1961, v. 23, no. 4, p. 15-23 and 76-79.

DESCRIPTORS: *Deficiency diseases, *Tocopherols, *Muscular atrophy, Diagnosis, Age factors, Pathology, *Pineal gland, Nervous system, *Vitamins, Nutrition.

Experimental muscular dystrophy in vitamin E deficiency of rabbits was similar in its histologic changes and individual clinical symptoms to progressive muscular dystrophy in man, and is therefore regarded as a model of this disease. Differences in the description of histologic changes in the muscles and nervous system are largely conditioned by the different treatment of the same pictures. The muscle fibers die as the result of different forms of waxy degeneration, homogenization without the formation of contractures, vacuolar and dedifferentiating dystrophy: changes in the nervous system are secondary. Progressive dedifferentiation of muscle fibres, which is treated differently by different authors, is a degenerative process which leads to the death of the myons and therefore can be called "dedifferentiating dystrophy". (Shcherbakova) An investigation of more than 200 human pineal glands, 24 epiphyses of human fetuses and 22 animal glands indicated that the pineal gland (epiphysis) of man and other warm-blooded biological species is similar in its origin to the parietal eye of cold-blooded animals. This characteristic in its phylogeny is responsible for certain characteristics of morphologic changes in the pineal gland in the course of ontogeny--a tendency toward pigment formation and cyst formation. (Khelimskii)

Stolyarova, L. G.
THE TREATMENT OF PARKINSONISM WITH NEW PHARMACOLOGIC PREPARATIONS (Lechenie Parkinsonizma Novymi Farmakologicheskimi Preparatami). 29 Sep 61 [12]p. JPRS: 10258.
Order fromOTS or SLA $1.60 61-28857

Trans. of Sovetskaya Meditsina (USSR) 1961, v. 25, no. 5, p. 107-114.

DESCRIPTORS: *Parkinsonism, Paralysis, Pharmacology, Therapy, Drugs, Atropine, Phenothiazine derivatives.

Clinical studies were made of 11 antiparkinsonism drugs, five of which were atropine-like (artane, parkinsan, cyclodol, ridinol, and arpenal), four were

derivatives of phenothiazine (diparkol, dinezin, deparkine, and parsidol), the Hungarian relaxant Na-90, and the hydrazide of isonicotinic acid, rimicid. In the group of atropine-like preparations, the best was cyclodol (artane, parkinsan). It considerably reduced the rigidity, amimia, bradykinesia, salivation, and sometimes also mitigated the tremor and, in average therapeutic doses, ordinarily did not cause side effects. Ridinol is somewhat weaker than cyclodol, but the side effects with it are fewer than the artane, and it yields a good effect in cases in which cyclodol cannot be used. Of preparations of the phenothiazine series, the best was diparkol. Dinezin and deparkine are somewhat weaker and, in advanced arteriosclerosis, produce side effects. Parsidol in the dose recommended in the instructions is less effective than diparkol and dinezin. Rimicid, in some patients, causes a slight improvement in the general condition and a reduction in rigidity and tremor, but, in our opinion, it cannot replace the atropine-like and phenothiazine preparations. Na-90 produces no positive effect in parkinsonism. The atropine-like substances produce a better effect than substances of the phenothiazine series. There is no standard scheme for the use of these substances. (Author)

Tsukerman, B. M.
EXPERIENCE WITH ELECTRIC DEFIBRILLATION OF THE AURICLES IN 20 PATIENTS WITH MITRAL CARDIAC LESIONS. 1 Dec 61 [7]p. JPRS: 11347.
Order from OTS or SLA $1.10 62-13636

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik [1961, v. 16] no. 8, p. 32-35.

DESCRIPTORS: *Electric currents, *Heat, *Cardiac muscle, Rheumatic fever, *Arrhythma, Electrocardiography.

All patients suffered from acquired (mostly combined) rheumatic cardiac lesions. On 15 of these commissurotomy for mitral stenosis was performed. On one patient with a mitral and aortic stenosis, only an aortic valvulotomy was performed. As the result of electric action on the heart, fibrillating arrhythmia was controlled in 17 patients, in three cases it proved ineffective. Defibrillation of the auricles failed in 3 gravely ill patients with pronounced enlargement of the heart and protracted anamnesis of fibrillating arrhythmia. The condenser discharge, applied to the heart, led to the cessation of auricular fibrillation. Their coordinated contractions were restored immediately, and on the electrocardiogram the previously absent P wave reappeared. The ventricular contractions became rhythmic, their rate decreased, and the pulse deficit disappeared.

Pharmacology and Toxicology

Myasnikov, A. L.
EFFECT OF CERTAIN NEUROTROPIC SUBSTANCES UPON CHOLESTEREMIA OF ATHEROSCLEROSIS. 18 Sep 61 [7]p. 11 refs. NIH no. 9-7-61.
Order from OTS or SLA $1.10 61-28684

Trans. of Klin[icheskaya] Med[itsinina] (USSR) 1956, v. 34, no. 6, p. 65-69.

DESCRIPTORS: *Nervous system, Blood, *Arteriosclerosis, Lipids, *Cholesterol, *Barbiturates, Drugs.

By means of pharmacological drugs, affecting the upper parts of the nervous system, it is possible to change the content of lipoids in the blood. Drugs, reducing the excitability of the central nervous systems, inhibiting its functions (sodium amytal and chloral hydrate) decrease the content of cholesterol in the blood in crucial experiments. Administration of drugs, stimulating the activity of the central nervous system (phenamine and caffeine), have a contrary effect, namely, they increase cholesteremia. The changes concern the esters as well as the free cholesterol; the esterization index does not change much. No principle differences were observed in the effect of the drugs upon cholesteremia in patients affected with atherosclerosis and ulcers. The effect of the neurotropic drugs upon the lecithin level in the blood does not show as characteristic changes as does the cholesterol level. (Author)

Tung, Ch'uan-sheng and Huang, Chung-sun.
THE EFFECT OF ANESTHETICS ON THE RESPIRATORY REFLEXES OF THE CAROTID SINUS. 14 Sep 61 [14]p. 19 refs. JPRS: 4965.
Order from OTS or SLA $1.60 61-28574

Trans. of Sheng Li Hsüeh Pao (Chinese People's Republic) 1960, v. 24, no. 2, p. 121-128.

DESCRIPTORS: *Anesthetics, Dogs, *Respiration, *Reflexes, *Vague nerve, Nervous system, Pentothal sodium, Barbiturates, Canavanine.

The character of the respiratory responses induced by the pressure-sensitive sense organs when the carotid sinus is stimulated has a close relationship with the kind of anesthetics used. The respiratory responses of dogs under penthotal, sodium amytal, and sodium barbital were principally excitatory. Under pentobarbital, there were more inhibitory responses than excitatory responses. Under chloralose a majority of the respiratory responses were either excitatory or diphase in character. Under amyl-beta-butylic acid the responses were principally inhibitory in character. The sectioning of the trunk of the right and left vagus nerves in the neck region can effect respiratory responses, but it has a definite relationship with the different kinds of anesthetics used. In animals anesthetized with penthotal, sodium amytal and sodium barbital, the responses were principally excitatory. Following sectioning of the trunk of the vagus nerve, the degree of excitation in some of these animals even became more conspicuous. In a few of the dogs the degree of excitation and respiration were reinforced simultaneously, while the respiratory frequency was lowered. In animals anesthetized with amyl-beta-butylic acid, penthotal, or chloralose, vagotomy proved advantageous to the strengthening or development of inhibitory responses. (Author)

Umezawa, H., Hayano, S., and others.
ON A NEW ANTIBIOTIC, GRISEOLUTEIN, PRODUCED BY STREPTOMYCES. 9p. 8 refs. (foreign text included) MTWL: 930.
Order from OTS or ETC $1.55 61-17578

Trans. of Journal of Antibiotics (Japan) 1951, v. 4, p. 34-37.

DESCRIPTORS: *Antibiotics, Streptomyces, Crystals, Preparation.

Radiobiology

Bogomolets', V. I.
EFFECT OF X-RAY IRRADIATION ON THE MEMBRANE POTENTIAL AND CONCENTRATION OF SODIUM AND POTASSIUM IN FROG MUSCLE FIBERS (Vplyv Renthenivs'koho Prominnya na Membrannyi Potentsial i Kontsentratsiyu Kaliyu i Natriyu v M'yazovykh Voloknakh Zhaby). 1 Sep 61 [14]p. 24 refs. JPRS: 9971.
Order from OTS or SLA $1.60 61-28042

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 2, p. 214-219.

DESCRIPTORS: *Muscles, *Electrolytes, X-rays, *Radiation sickness, Physiology, Sodium, Potassium.

X-radiation in doses of 60 krads or more reduces the membrane potential of muscle fibers of the frog. This reduction occurs immediately after irradiation; over the ensuing three hours the level of it decreases only negligibly. The muscle fiber, under the influence of these same doses, loses potassium and acquires sodium. These changes are intensified with increase in the doses of radiation and the duration of irradiation. Such damage, perhaps, is a consequence of the influence of ionizing radiation both on metabolic processes in the fibers and on the physico-chemical properties of their membranes. These changes lead to an equilibration of the asymmetry in the distribution of ions between the cell and the surrounding medium and to a reduction in the electrical difference in the potentials across the membrane. (Author)

Ivanov, A. E.
PATHOLOGICAL DIAGNOSIS OF RADIATION SICKNESS. 6 Oct 61 [40]p. JPRS: 10357.
Order from OTS or SLA $3.60 61-28754

Trans. of mono. (brochure) Patologo-anatomicheskaya Diagnostika Luchevoi Bolezni, Moscow, 1960, 27p.

DESCRIPTORS: *Diagnosis, Pathology, *Radiation sickness, Tissues (Biology) *Lymphatic system, *Testes, *Bone marrow, Skin, Histological sections, Cells (Biology)

Maidanov, A. P., Pelikh, I. K., and Makarenko, I. P.
EFFECT OF IRRADIATION ON THE PHYSICO-CHEMICAL PROPERTIES OF THE PROTEINS IN THE BLOOD SERUM (Vplyv Oprominennya na Fizyko-Khimichni Vlastyvosti Bilkiv Syrovatky Krovi).
20 June 61 [10]p. 6 refs. JPRS: 9457.
Order from OTS or SLA $1.10 61-23941

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961 [v. 33] no. 1, p. 88-93.

Portions of this report will not reproduce well.

DESCRIPTORS: *Ultraviolet radiation, *Proteins, *Radiation effects, *Blood proteins, Body fluids, Blood chemistry.

The physical methods which we used to study molecular structural changes in sera irradiated in vitro with ultraviolet rays permit us to produce the threshold doses reported in the literature. At the basis of the molecular structural changes which we observed in the irradiated solutions of sera, lies a mechanism such as denaturation of the molecules, accompanied by an increase in the electrical charge and hydration, or photolytic disintegration, which leads both to a decrease in the number of particles and in the charge per unit volume of solution, and to an increase in hydration. The data indicate that the molecular structural changes which occur as the result of irradiation are, rather large and rather stable and may last a long time. (Author)

Surgery

Monchenko, G. D., Mausevich, M. Ya. and others.
REPORTS ON SOVIET ANESTHESIOLOGY: EXPERIENCE IN THE USE OF MYORELAXANTS FOR OPERATIONS FOR PULMONARY OPERATIONS [AND] CARDIAC ARREST DURING ANESTHESIA FOR PATIENTS WITH BURNS. 5 Sep 61 [13]p. 22 refs. JPRS: 4958.
Order from OTS or SLA $1.60 61-28293

Trans. of Novyi Khirurgicheskii Arkhiv (USSR) 1961 [v. 40] no. 6, p. 35-41.

Portions of this report will not reproduce well.

DESCRIPTORS: *Anesthetics, *Muscle *Relaxants, *Surgery, *Lungs, *Heart arrest, Burns, Respiration.

The application of the muscle relaxants and controlled respiration over the entire operation on the lungs creates the optimal conditions for the oxygenation and anesthetization of the patients. Dithilin and Lysthenon, when used for facilitating intubation and as well in the course of the operation possess advantages over Diplacin. For operations which are not connected with the destruction of a heavy concretion, it is rational to use the drop injection of Dithilin; in tramatic operations, the fractional method is called for. Local anesthesia of the "shockogenic" zones in the absence of major concretions is not obligatory. (Monchenko) In the analysis of the reasons for cardiac arrest in the patients which we have observed and also in a number of other cases which have been described in literature, two circumstances attract one's attention: (1) the indisputable connection of cardiac arrest with the administration of anesthesia and intubation; and (2) the period which has passed from the moment of the trauma and the presence of clinically noted emaciation. (Mausevich et al.)

Petrovskii, B. V., Milonov, O. B., and Krylov, V. S.
PLASTIC PROSTHETICS IN THE SURGICAL TREATMENT OF ANEURYSMS OF PERIPHERAL VESSELS (Protezironanie Plastmassovymy Protezami pri Khirurgicheskom Lechenii Anevrism Perifericheskikh Sosudov). 18 Aug 61 [13]p. 8 refs. JPRS: 9906.
Order from OTS or SLA $1.60 61-27754

Trans. of Khirurgiya (USSR) 1961, v. 37, no. 5, p. 7-12.

DESCRIPTORS: *Prosthetics, *Plastic tubing, *Surgery, Transplantation, *Blood vessels, Blood circulation.

In the operation of an arterial prosthesis with the substitution of its defect with a plastic prosthesis, the circulation becomes completely restored in the distal part of the extremity. The experience of our clinic permits us to recommend in aneurysms of the peripheral vessels a resection of the damaged arterial segment followed by the transplantation of the plastic prosthesis. The aneurysmal sac should be excised, but in some cases it can be left in situ provided it is completely eliminated from circulation. (Extract)

Sakka, Michel.
HEART AND VASCULAR SURGERY IN COMMUNIST CHINA. 12 Sep 61 [19]p. 1 ref. JPRS: 8855.
Order from OTS or SLA $1.60 61-28873

Trans. of Cahiers Franco-Chinois (France) 1961, no. 10, p. 73-83.

DESCRIPTORS: *Surgery, *Heart, China, *Blood vessels.

The present state of Chinese surgery, has no need to envy in anything that of the most developed "Western" countries: but to pull itself up to this level it has had to cover a long road, in a very short period of history. The surgical leap forward is quite remarkable. (Extracted).

Zoology

Blagoveshchenskii, D. I.
THE STRUCTURE OF THE DIGESTIVE SYSTEM OF MALLOPHAGA IN CONNECTION WITH THEIR FEEDING, tr. by P. A. Kazakov. [1961] 35p. 27 refs. [CSIRO Trans. no.] 5417.
Order from OTS or SLA $3.60 61-27452

Trans. of Parazitologicheskii Sbornik (USSR) 1949, v. 11, p. 229-245.

DESCRIPTORS: *Lice, *Birds, *Digestive system *Feeding, Feathers, Blood.

Moiseev, P. A.
FACTORS OF POPULATION DYNAMICS OF THE COMMERCIAL FAUNA IN THE NORTHWEST PACIFIC OCEAN (Osobennosti Dinamiki Chislennosti Promyslovoi Fauny v Severozapadnoi Chasti Tikhogo Okeana i Ee Prichiny). 1962, 10p. 14 refs. PL-480 Int.
Order from OTS $0.50 60-51152

Trans. of Zoologicheskii Zhurnal (USSR) 1956, v. 35, no. 11, p. 1601-1607.

DESCRIPTORS: *Fishes, *Shellfish, *Pacific ocean, *Sea of Japan, *Ecology, Ocean bottom, Ocean currents, Production, Fisheries, Reproduction, Food.

Ognev, S. I.
[WILD] ANIMALS OF THE USSR AND ADJACENT COUNTRIES; RODENTS; VOL. 5: ANIMALS OF EASTERN EUROPE AND NORTHERN ASIA, GLIRES L.; CITELLUS (UROCITELLUS) UNDULATUS PALL. (1841) THE LONG-TAILED SUSLIK, tr. by Zelda D. Knowles. 7 Aug 52, 73p. (illus. omitted).
Order from OTS or SLA $7.70 61-27975

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran. Gryzuny, v. 5: Zverni Vostochnoi Evropy i Severnoi Azii, Glires L., n.p., 1947, p. 185-216.

DESCRIPTORS: Animals, *Rodents, *Classification, Identification, Distribution, Anatomy, Physiology.

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT COUNTRIES: RODENTS, VOL. 6: [SELECTED PART] tr. by Zelda D. Knowles. 31 July 52, 8p. (1 plate omitted).
Order from OTS or SLA $1.10 61-27982

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran, Gryzuny, v. 6, n.p. [1948] p. 467-470.

DESCRIPTORS: Animals, *Rodents, *Classification, *Identification, Physiology, Anatomy, Distribution.

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT COUNTRIES: RODENTS, VOL. 6: [SELECTED PART] DICROSTONYX TORQUATUS PALLAS (1778) THE HOOFED OR COLLARED LEMMING, tr. by Zelda D. Knowles. 1 Aug 52, 12p. (3 figs. omitted).
Order from OTS or SLA $1.60 61-27974

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran. Gryzuny, v. 6, n.p., 1948, p. 498-503.

DESCRIPTORS: Animals, *Rodents, Identification, *Classification, Age, Growth, Reproduction, Anatomy.

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT COUNTRIES: RODENTS, VOL. 6: [SELECTED PART] SUBSPECIES OF THE HOOFED LEMMING, tr. by Zelda D. Knowles. 18 Sep 52, 5p. (1 fig. omitted).
Order from OTS or SLA $1.10 61-27983

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran, Gryzuny, v. 6, n.p., 1948, p. 507-509.

DESCRIPTORS: Animals, *Classification, Identification, *Rodents, Anatomy, Physiology, Distribution

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT COUNTRIES: RODENTS, VOL. 6: [SELECTED PART] SUBSPECIES OF THE OBSKII LEMMING, LEMMUS OBENSIS BRANTS, tr. by Zelda D. Knowles. 31 July 52, 6p. (1 plate 1 map omitted).
Order from OTS or SLA $1.10 61-27981

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran. Grzuny, v. 6, n.p. [1948] p. 463-465.

DESCRIPTORS: Animals, *Classification, Identification, *Rodents, Anatomy, Physiology, Distribution, Bibliography.

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT COUNTRIES: RODENTS, VOL. 7: [SELECTED PART] tr. by Zelda D. Knowles. 11 Sep 52, 3p.
Order from OTS or SLA $1.10 61-27979

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran. Grzuny, v. 7, n.p., 1950, p. 288-289.

DESCRIPTORS: Animals, *Rodents, *Mice *Classification, Identification, Anatomy, Distribution.

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT COUNTRIES: RODENTS, VOL. 7: [SELECTED PART] tr. by Zelda D. Knowles. 15 Sep 52, 4p. (illus. omitted).
Order from OTS or SLA $1.10 61-27978

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran. Gryzuny, v. 7, n.p., 1950, p. 286-288.

DESCRIPTORS: Animals, *Rodents, *Mice *Classification, Identification, Distribution.

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT COUNTRIES: RODENTS, VOL. 7: [SELECTED PART] SUBSPECIES OF MICROTUS MIDDENDORFII, tr. by Zelda D. Knowles. 7 Nov 52, 48p. (12 illus. omitted).
Order from OTS or SLA $4.60 61-27977

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran. Gryzuny, v. 7, n.p., 1950, p. 247-271.

DESCRIPTORS: Animals, *Rodents, *Mice, *Classification, Identification, Distribution, Anatomy, Nutrition, Parasites.

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT COUNTRIES: RODENTS, VOL. 7: [SELECTED PART] SUBSPECIES OF THE RED FIELD VOLE, CLETHRIONOMYS RUTILUS PALL, tr. by Zelda D. Knowles. 29 Sep 52, 5p. (2 figs. omitted).
Order from OTS or SLA $1.10 61-27976

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran. Gryzuny, v. 7, n.p., 1950, p. 146-148.

DESCRIPTORS: Animals, *Rodents, *Mice, Identification, *Classification, Anatomy, Distribution.

Ognev, S. I.
WILD ANIMALS OF THE USSR AND ADJACENT [COUNTRIES] RODENTS, VOL. 7: [SELECTED PART] SUBSPECIES OF THE RED-GRAY FIELD VOLE, CLETHRIONOMYS RUFOCANUS SUND, tr. by Z. Knowles. 30 Oct 52, 45p. (10 illus. omitted).
Order from OTS or SLA $4.60 61-27985

Trans. of Russian language mono. Zveri SSSR i Prilezhashchikh Stran, Gryzuny, v. 7, n.p., 1950, p. 112-131.

DESCRIPTORS: Animals, *Rodents, *Mice, Identification, *Classification, Anatomy, Physiology, Distribution, Reproduction, Food.

Sharov, A. G.
THE SYSTEM OF PRIMITIVE WINGLESS INSECTS. [1961] [14]p. 21 refs.
Order from OTS or SLA $1.60 61-28425

Trans. of [Akademiya Nauk SSSR]. Inst[itut] Morfol-[ogii] Zhivotnykh. Trudy, 1959, v. 27, p. 175-186.

DESCRIPTORS: *Insects, *Classification,

CHEMISTRY

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF CHEMICAL SCIENCE, 1941, NO. 1: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. Dedicated to N. D. Zelinskii on the occasion of his 80th birthday. [1961] 25p. 52 refs.
Order from OTS or SLA $2.60 61-20795

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1941, no. 1, p. 9-66, 79-119, 121-126, 137-155, 157-165, 177-224. #Complete translations of p. 13-48, 97-114, 177-210 are available separately.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Hydrocarbons, Raman spectroscopy, Synthesis, Catalysts, Temperature, Pressure, Antiknock, Hexanes, Cyclohexanes, Methyl radicals, Cyclopentane, Pentanes, Hydrogen, Nitric acid, Butanes, Carbon dioxide, Fractionation, Towers (Chemistry) Ethylenes Butenes, Polymerization, Propanes, Butanols, Dehydrogenation, Acetylene derivatives.

Contents:
Optical method of investigation of hydrocarbons. I. Objectives of Raman spectroscopy of hydrocarbons and the outlook for its application, by N. D. Zelinskii and G. S. Landsberg
#Optical method of investigation of hydrocarbons. II. Spectra of combination scattering of paraffins, by P. A. Bazhulin and others
#Effect of the carrier on synthesis of liquid hydrocarbons with Ni-MnO-Al_2O_3 under atmospheric pressure, by Ya. T. Eidus and others
#Decreasing the reduction temperature of the catalysts for synthesis of liquid hydrocarbons from carbon monoxide and hydrogen under atmospheric pressure, by Ya. T. Eidus and others
#Catalysts for gasoline synthesis from carbon monoxide and hydrogen requiring no high temperature reduction, by A. M. Rubinshtein and others
Synthesis and conversions of 1, 1-dimethylbicyclo-(0, 1, 3)-hexane, I. by N. M. Kizhner and I. B. Losik
1, 1-dimethylbicyclo-(0. 1, 3)-hexane and its catalytic hydrogenation, II. by N. D. Zelinskii and I. B. Losik
Action of nitric acid on hydrindan, by S. S. Nametkin and others
Interation of butane with carbon dioxide in the presence of catalysts, by A. A. Balandin and others
#Laboratory columns for exact fractionation of liquid mixtures, by B. A. Kazanskii and others
#Hydrogenation of homologs of cyclopentane with scission of the ring, by B. A. Kazanskii and others
Polymerization of isobutene over aluminum silicate at different temperatures, by B. A. Kazanskii and M. I. Rozengart
Conversions of furylclopropane under conditions of catalytic hydrogenation, by N. I. Shuikin and V. V. Daiber
A qualitative reaction for diolefins, by A. P. Terent'ev and A. A. Demidova
Catalytic dehydrogenation of normal butyl alcohol to butyl butyrate, by M. I. Usakov and A. D. Chinaeva
Antiknock properties and pour points of individual hydrocarbons of the diesel fuel range, I, by A. D. Petrov
Polymerization of olefins of different structure under the action of aluminum chloride, I, by A. P. Meshcheryakov
#Mechanism and relative velocities of aromatization of paraffins, I. by S. R. Sergienko
#Contact cyclization of paraffin hydrocarbons. II. Investigation of the reaction products, by S. R. Sergienko
#Formation of azeotropic mixtures of olefins with primary alcohols in synthesis of olefins through magnesium-organic compounds, by A. F. Plate and G. A. Tarasova
#Catalytic conversions of normal hexylclopentane, by A. F. Plate
Acetylene derivatives. XVII. Hydration of hydrocarbons of the series of bivinylacetylene, by I. N. Nazarov and I. I. Zaretskaya.

JOURNAL OF APPLIED CHEMISTRY, 1940, VOL. 13, NO. 6: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 15p.
Order from OTS or SLA $1.60 61-20369

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1940, v. 13, no. 6, p. 823-840, 869-878, 887-893, 942-950.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, *Ammonia, Synthesis, Pressure, Iron catalysts, Aluminum compounds, Oxides, Chemical reactions, *Carbon compounds, Monoxides, Carbon, Catalysts, *Hydrocarbons, Oxidation, *Waxes, *Phenols.

Contents:
Effect of the content of alumina in iron catalysts for ammonia synthesis upon their activity under atmospheric pressure, by V. G. Telegin and others
Carbon catalysts for conversion of carbon monoxide, by V. M. Grinevich
Cold flame oxidation of hydrocarbons under elevated pressure. I. Oxidation of raw cracked gas, by B. V. Aivazov and V. I. Gnyubkin
Refining of wax isolated from peat tar, by A. Vinogradov
Reduction velocities of phenols. I. Monoatomic phenols, by V. I. Bobyshev and others.

JOURNAL OF APPLIED CHEMISTRY, 1941, VOL. 14, NO. 3: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 7p. 8 refs.
Order from OTS or SLA $1.10 61-20396

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1941, v. 14, no. 3, p. 379-404 and 426-430.

DESCRIPTORS: *Chemistry, Abstracting, Preparation, *Carbon, Dehydrogenation, Alloys, Catalysts, Regeneration, *Chemical industry, Organic compounds

Contents:
Preparation and properties of potash-activated carbon, by E. V. Alekseevskii and T. I. Andreeva
Dehydrogenation of borneols on alloy catalysts, by V. E. Tishchenko and others
Regeneration of Raney catalyst for organic synthesis, by I. K. Sivkov and B. Yu. Migulin
Scientific work of the chemical institute of the Georgian [Caucasus] division of the Academy of Sciences USSR, by D. I. Eristavi.

JOURNAL OF APPLIED CHEMISTRY, 1941, VOL. 14, NO. 4/5: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 12p. 12 refs.
Order from OTS or SLA $1.60 61-20395

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1941, v. 14, no. 4/5, p. 435-445, 449-465, 478-482, 521-523, 542-558, 605-608, 618-631, 646-665.
#Complete translations of p. 435-445, 449-465, 542-558, 618-631, 652-661 are available separately.

DESCRIPTORS: Chemistry, Abstracting, *Butadienes, Synthesis, *Butenes, Dehydrogenation, Catalysis, *Hydrogen, Production, *Hydrocarbons, Decomposition, Vapor pressure, Mixtures, *Chlorosulfonic acid, *Sulfur compounds, *Oxides, *Styrenes, Dehydration vapors, Phase studies, *Copolymerization, Ketones, Polymers, *Vinyl chlorides, *Polymerization, Benzoyl radicals, Peroxides, Colloids, Stability, Benzaldehydes, Acetaldehydes, Acetic acids, Hydrogen compounds, Barium compounds, Solutions, Condensation reactions, *Benzenes, Ethanes, *Chlorides, Organic

solvents, Moisture, Organic compounds, Water, *Gasoline, Chemical analysis, *Lead compounds, Ethyl radicals, Determination, Organic substances, Air, Methyl radicals, Phenyl radicals, Carbonyls

Contents:
#Preparation of 1, 3-butadiene by catalytic dehydrogenation of butene, by A. A. Balandin and others
#Production of hydrogen by conversion of hydrocarbons with steam, by E. V. Rakovskii and O. A. Burinova
Pressure of vapors over a mixture of chlorosulfonic acid and sulfur trioxide, by S. A. Kudryateev and others
Preparation of styrene by dehydration of methylphenylcarbonal in the vapor phase, by A. A. Vansheidt and V. M. Zel'tser
#Copolymerization of styrene with methyl isopropenyl ketone, by B. N. Rutovskii and G. S. Goncharov
#Polymerization of vinyl chloride in solutions and emulsions, II, by E. I. Pavlovich
#High molecular products of condensation of benzene with dichloroethane method of synthesis and investigation of the composition and structure, by A. L. Klebanskii and G. I. Mironenko
Determination of the concentration of solutions by a system of two solvents. III. Determination of moisture in organic compounds insoluble in water, by S. I. Spiridonova
#Rapid method of determination of tetraethyllead in leaded gasolines, by M. O. Khaikin
Apparatus for signaling hazardous concentrations of benzene [and for other organic substances] in the air, by I. B. Kogan

Boguslavskii, A. Sh. and Ruchinskii, V. R.
INTER-VUZ SCIENTIFIC CONFERENCE ON THE REORGANIZATION OF FACTORY PLANNING BASED ON MATHEMATICAL METHODS AND THE LATEST COMPUTER TECHNIQUES, MOSCOW, DEC 60 [AND] CONFERENCE ON THE INTENSIFICATION OF MASS EXCHANGE PROCESSES, DZERZHINSK, 26-28 DEC 60. Chemistry: USSR no. 10. 2 Oct 61 [7]p. JPRS: 10384.
Order from OTS or SLA $1.10 61-28632

Trans. of Khimicheskaya Promyshlennost' (USSR) 1961, no. 2, p. 70 and 73.

DESCRIPTORS: *Chemical industry, Conferences, Computers, Management engineering, Towers (Chemistry), Mathematical computer data

Analytical Chemistry

Erdenbaeva, M. I.
DETERMINATION OF ELEMENTARY SELENIUM AND SULFUR JOINTLY PRESENT IN CYANIC SOLUTIONS BY THE IODATOMETRIC METHOD. 3 Oct 61 [11]p. 6 refs. JPRS: 10395.
Order from OTS or SLA $1.60 61-28780

Trans. of A[kademiya] N[auk] Kaz[akhskoi] SSR, Alma Ata. Izvestiya. [Seriya Khimicheskaya] 1960 [v. 5] no. 1(17) p. 63-68.

DESCRIPTORS: *Cyanides, *Selenium, *Sulfur, Determination, Iodates, Potassium compounds, Titration, Hydrochloric acid, Acids.

The minimum limit of selenium concentration determined by the iodatometric method was established. Comparison of the iodatometric method of determining selenium with the thiosulfate and permanganate methods shows the superiority of the iodatometric method both according to accuracy of results and speed of execution. The minimum limit of sulfur concentrations determined by the iodatometric method was established. Comparison of the iodatometric method of determining sulfur in the form of sulfocyanide with the sulphite method shows that the iodatometric method is not inferior to the sulfite method in accuracy and reliability of results obtained. Methods of determining elementary selenium and sulfur contained together by means of converting them into potassium selenocyanide and sulfocyanide respectively with subsequent application of the iodatometric method are proposed. (Author)

Kofler, Walter, Kofler, Adelheid, and Kofler, Ludwig.
A MICRO-COLD STAGE AND ITS APPLICATION. [1961] 26p. (3 figs. omitted) 53 refs.
Order from SLA $2.60 62-10449

Trans. of Mikrochemie (Austria) [1952] v. 38, no. 3, p. 218-231.

DESCRIPTORS: *Microscopes, Design, *Microchemistry, Low temperature research, Instrumentation, Coolants, Cooling.

On the basis of experience with the micro-hot stage, a micro-cold stage was constructed which is simple in operation and ready for use at all times. The cooling is obtained by vaporization of liquid carbon dioxide. An electrical heater installed next to this device makes it possible also to pass through the region of room temperature in either direction at any desired speed. The apparatus has a temperature range from -55° to +80°C. (Author)

Mariani, E. and Bolla, M.
CHROMATOGRAFISCH ONDERZOEK VAN HET GERMANIUM (Chromatographic Research of Germanium) 4p. MTWL: 886. (text in Dutch).
Order from OTS or ETC $1.40 61-17616

Trans. of Piccole Note. Recensioni e Notizie (Italy) 1955, v. 4, p. 74-75

DESCRIPTORS: *Germanium, *Chromatographic analysis, Minerals, Electrolysis, Zinc.

Rossi, C., Munari, S. and others.
CHROMATOGRAPHY IN GAS PHASE OF C_1-C_4 HYDROCARBONS ON ORGANOPHILIC SILICAS (Cromatografia in Fase Gas di Idrocarburi C_1-C_4 su Silici Organofile). [1961] [15]p. (foreign text included) 6 refs.
Order from SLA $1.60 62-10318

Trans. of la Chimica e l'Industria (Italy) 1960, v. 42, no. 7, p. 724-727.

DESCRIPTORS: *Hydrocarbons, Isomers, *Silicon compounds, *Dioxides, Coatings, Chromatographic analysis, *Gas chromatography, Organic compounds, Adsorption.

Silicas coated with organic radicals, obtained by esterification with alcohols, were used in the preparation of columns for chromatography in gaseous phase. Their application for the analysis of gaseous mixtures of hydrocarbons from C_1 to C_4 and their isomers was studied. The best results were obtained with silicas esterified with benzyl alcohol; good results were also obtained with lauryl alcohol; the separation may take place at room temperature and with a 2- to 4-m column. (Author)

Shkodin, A. M., Ismaĭlov, N. A. and Dzhyuba, N. P.
DE INVLOED VAN WATERVRIJ MIERENZUUR OP DE STERKTE VAN BASEN (Effect of Anhydrous Formic Acid on the Strength of Bases). 8p. 10 refs.
MTWL: 607. (Text in Dutch).
Order from OTS or ETC $1.55 61-17524

Trans. of Obshcheĭ Khimii (USSR) 1950, v. 20, no. 11, p. 1999-2003.

DESCRIPTORS: *Formic acids, Anhydrides, *Hydroxides, Polarographic analysis, Solutions.

Yatsimirskiĭ, K. B. and Afanas'eva, L. P.
KINETISCHE METHODEN IN DE KWANTITATIEVE ANALYSE. 3. BEPALING VAN KLEINE HOEVEELHEDEN MOLYBDEEN (5) (Kinetic Methods of Quantitative Analysis. III. Determination of Small Quantities of Molybdenum) tr. by P.M.A. Wouters. 9p. (foreign text included) 5 refs. MTWL: 891. (text in Dutch).
Order from OTS or ETC $1.55 61-17621

Trans. of Zhurnal Analiticheskoĭ Khimii (USSR) 1956, v. 11, p. 319-322.

DESCRIPTORS: *Molybdenium, *Quantitative analysis, Determination.

Yurko, D. G.
THE USE OF A CHROMATOGRAPHIC METHOD FOR THE SEPARATION AND ANALYSIS OF AROMATIC HYDROCARBONS AND THEIR POLYNITRO DERIVATIVES, tr. by W. E. Batty and I. Dunstan. Oct 60 [11]p. 20 refs. E. R. D. E. 1/T/60; [DSIR NLL] M. 2953.
Order from OTS or SLA $1.60 61-23377

Trans. of [Akademiya Nauk SSSR. Komissiya po Analiticheskoi Khimii. Trudy] 1955, v. 6(9), p. 182-190.

DESCRIPTORS: *Hydrocarbons, Nitrobenzenes, Nitro radicals, Toluenes, TNT, Xylenes, Ethyl radicals, Benzenes, Separation, Chromatographic analysis.

Zheleznova, E. I. and Tokareva, D. V.
DETERMINATION OF URANIUM, THORIUM AND RADIUM IN ORES BY A RADIOMETRIC METHOD. 10p. 5 refs. MTWL: 954.
Order from OTS or ETC $1.55 61-17552

Trans. of Zavodskaya Laboratoriya (USSR) 1958, v. 24 no. 8, p. 959-968.

DESCRIPTORS: Uranium, Thorium, Radium, Determination, Radiometers, *Ores, *Gamma ray spectrometers.

Zhukhovitskiĭ, A. A. and Turkel'taub, N. M.
THE APPLICATION OF THE THERMAL FACTOR TO GAS CHROMATOGRAPHY. 8p. 14 refs. MTWL: 849.
Order from OTS or ETC $1.55 61-17357

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 116, no. 6, p. 986-989.

DESCRIPTORS: Gases, *Chromatographic analysis, Temperature.

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 9. [Jan 62] 317p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4457

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 9, p. 1993-2222.

DESCRIPTORS: *Inorganic substances, *Chemistry, Gas ionization, Chlorides, Plutonium compounds, Tellurium compounds, Sodium, Potassium, Acids, Solutions, Magnetic susceptibility, Osmium compounds Complex compounds, Platinum compounds, Chlorides, Ethylenes, Uranyl radicals, Cyanides, Solubility, Complex ions, Stability, Precipitation, Chemical reactions, Salts, Sodium compounds, Hydroxides, Iron compounds, Phosphates, Reduction, Antimony, Fluorides, Solvent extraction, Nitric acid, Butyl radicals, Distribution, Chromatographic analysis, Iron, Cobalt, Ion exchange, Rare earth elements, Resins, Rubidium, Aluminum compounds, Silicates, Phase studies, Magnesium alloys, Neodymium alloys, Electrical conductance, Supersaturation, Sulfates, Water, High temperature research, Radioactive isotopes, Decay

Contents:
The relationship between the radius of an undeformed "gaseous" ion, and certain physicochemical ionic properties, by K. S. Krasnov
The preparation and properties of plutonium halides, I. Plutonium chlorides, by V. V. Fomin and others
The tellurites of sodium and potassium, I, by O. I. Vorob'eva and E. A. Lavut
The function of acidity of aqueous solutions of formic, acetic, hydrochloric, nitric and sulfuric acids, by N. M. Milyaeva
Magnetic susceptibility of osmium complex compounds, by V. I. Belova and Ya. K. Syrkin
The geometric isomerism of the dihydroxydiammino-dichlorides of tetravalent platinum, by I. I. Chernyaev and N. N. Krasovskaya
The electronic structure of platinum-ethylene compounds, by M. E. Dyatkina
Uranyl ferrocyanides, by I. V. Tananaev and M. I. Levina
The problem of the solubility of ionic compounds, by V. P. Vasil'ev

Stability of magnesium, calcium, strontium and barium complexes in aqueous solution, by V. P. Vasil'ev

The determination of the composition of the precipitates formed by the reaction of uranyl salts with sodium hydroxide, by V. I. Paramonova and others

The nature of some ferric phosphates, by N. V. Shishkin and others

Effect of chloride, bromide and sulfate ions on the reduction of selenious acid by sulfurous and hypophosphorous acid, by A. K. Babko and T. T. Mityureva

The higher polythionic acids, by I. V. Yanitskii and others

Polarographic investigation of complex compounds of trivalent antimony in sodium fluoride solutions, by D. Pavlov and D. Lazarov

Extraction of nitric acid with tributyl phosphate, by V B. Shevchenko and others

Extraction of plutonium IV with tributyl phosphate. I. Dependence of the coefficient of distribution upon the concentration of tributyl phosphate, by V. V. Fomin and others

Determination of the stability constants of $Ce(NO_3)_x^{3-x}$ ions by extraction with tributyl phosphate, by V. V. Fomin and others

Chromatographic separation of Fe and Co ions, by I. A. Korshunov and others

The dependence of the ion exchange separation of rare-earth elements on the structural rigidity and the exchange capacity of resins, by B. K. Preobrazhenskii and others

High temperature synthesis of rubidium aluminosilicate, by V. E. Plyushchev and others

Phase diagram of alloys of the system magnesium-neodymium, by E. M. Savitskii and others

The electrical conductivity of the systems V_2O_5 - PbO, V_2O_5 - CaO and V_2O_5 - MgO, by O. A. Esin and V. L. Zyazev

$TiCl_4$-$NbCl_5$ and $TiCl_4$ - $TaCl_5$ systems, by L. A. Nisel'son, and G. L. Perekhrest

The solubility isotherm of the system K_2SO_4 - Na_2SO_4 - $MgSO_4$ - H_2O at 75°, by N. P. Andronova and I. N. Lepeshkov

Interaction in the system GeO_2 - HF - H_2O at 25°, by I. V. Tananaev and K. A. Avduevskaya

Investigation of interaction in the system GeO_2 - $H_2C_2O_4$ - H_2O at 25°, by I. V. Tananaev and K. A. Avduevskaya

Solubility and supersaturation in the system sodium sulfate-water at high temperatures, by E. I. Akhumov and E. V. Pylkova

A visual-polythermal investigation of an aqueous reciprocal system consisting of the chlorides and sulfates of sodium and potassium at 0°, 5°, 10° and 15°, by P. G. Rustamov and A. G. Bergman

The 20°, 25° and 30° isotherms of an aqueous reciprocal system consisting of chlorides and sulfates of sodium and potassium, by A. G. Bergman and P. G. Rustamov

The mechanism of migration of radioactive isotopes produced in α-decay, by V. I. Baranov and others

Preparation of metallic cesium from cesium fluoride, by N. N. Zhuravlev

The behavior of selenium contaminations in the vacuum distillation of tellurium, by A. V. Novoselova and others

Chlorination of beryllium oxide by carbon tetrachloride, by A. V. Novoselova and K. N. Semenenko

Study of the reaction kinetics of the complex compounds of rhodium, by O. E. Zvyagintsev and E. F. Shubochkina

Calculation of the line of the cementite-austentite equilibrium of FE-C alloys, by V. I. Psarev

Measurement of the transport number of the Na+ION in the melt of $Li_2O \cdot Na_2O \cdot 4SiO_2$, by V. I. Malkin and V. V. Polidyshev

Conference on the polarographic method of analysis.

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 10. 1961, 279p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4458

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 10, p. 2225-[2429].

DESCRIPTORS: *Inorganic substances, *Chemistry, Diboranes, Reduction, Plutonium compounds, Bromides, Single crystals, Sulfur compounds, Oxides, Thermochemistry, Transition elements, Carbon compounds, Carbonates, Cerium, Acids, Chemical reactions, Synthesis, Germanium compounds, Chlorides, Nitrogen, Complex compounds, Rhenium compounds, Chemical elements, Platinum compounds, Ruthenium, Iron, X-rays, Dehydration, Crystals, Salts, Hydrogen, Ions, Ammonium radicals, Molybdates, Surface tension, Phase transitions, Manganese alloys, Copper alloys, Iron alloys, Reaction kinetics, Chlorination, Titanium compounds, Niobium compounds, Lithium compounds, Nitrates, Acetamides, Chlorine compounds, Water, Esters, Perchlorate acid, Alcohols, Crystallization, Solubility, Temperature, Heat of solution, Cesium compounds, Hydrochloric acid, Solutions, Refractive index.

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The reducing capacities of diborane and some of its derivatives, by V. I. Mikheeva and others

Preparation and some properties of plutonium tribromide, by V. V. Fomin and others

Methods of obtaining monocrystals of CdS, CdSe and of mixed monocrystals CdS + CdSe by I. B. Mizetskaya and others

Laboratory preparation of anhydrous liquid sulfur trioxide, by S. N. Kondrat'ev and L. I. Kuznetsov-Fetisov

The thermochemistry of compounds of transition metals and the theory of crystal fields, by K. B. Yatsimirskii

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Thioether-ammine compounds of bivalent platinum, by S. P. Derendyaev

The electrolytic reduction of some nitroso compounds of ruthenium, by O. E. Zvyagintsev and A. Kurbanov

The orthoperiodate of trivalent iron, by G. B. Seifer

X-ray study of the process of dehydration of crystals of 12-phosphotungstic acid, by A. A. Babad-Zakhryapin

Study of the properties of the salt forming hydrogen ions of phosphotungstic acid, by N. B. Mikheev and V. I. Spitsyn

Physicochemical investigation of phospho-12 (24)-Tungstic acid, by E. Ya. Rode and M. P. Sokolova

Physicochemical investigation of germanium-12-Tungstic acid, by E. Ya. Rode and M. M. Ivanova

Thermal dissociation of ammonium molybdates, by E. Ya. Rode and V. N. Tverdokhlebov

The surface tension of ternary systems, by V. B. Lazarev

Phase transformations in the manganese-copper-iron system, by R. I. Agladze, and L. I. Topchiashvili

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Kinetics of chlorination of titanium dioxide and niobium pentoxide, by I. S. Morozov and S. L. Stefanyuk

Investigation of the system lithium nitrate-acetamide, by M. A. Klochko and G. F. Gubskaya

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Esters of perchloric acid with certain polyhydric alcohols, by A. A. Zinov'ev and I. A. Zakharova

Physicochemical study of the system K_2SO_4-$MgSO_4$-$CaSO_4$-H_2O at 35°, by I. N. Lepeshkov and L. V. Novikova

I. The volume of schoenite crystallization at 0° in ghe marine system K, Na, Mg‖Cl, SO_4-H_2O, by O. K. Yanat'eva and V. T. Orlova

Solubility isotherms of the systems Li_2SO_4-$FeSO_4$-H_2O, Li_2SO_4-$CoSO_4$-H_2O, and Li_2SO_4-$NiSO_4$-H_2O at 25°, by V. P. Blidin and T. A. Nadreeva

The temperature dependence of the heat of solution of cesium chloride in aqueous solutions of hydrochloric acid, by M. N. Rednikova

Complex formation in the systems $MnCl_2$-LiCl-H_2O, $CoCl_2$-KCl-H_2O, and $AlCl_3$-KCl-H_2O, by A. Ya. Deich

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The character of the bond between ruthenium and the NO-group in nitroso compounds, by O. E. Zvyagintsev and A. Kurbanov

Thermographic investigation of potassium nitrate, sodium nitrate and sodium nitrite at low temperatures, by S. I. Berul'

Hexamolybdatogallates of alkali metals, by B. N. Ivanov-Emin and Ya. I. Rabovik

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 12. 1961, 286p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4460

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 12, p. 2593-[2810].

DESCRIPTORS: *Inorganic substances, *Chemistry, Mass spectroscopy, Sublimation, Sodium compounds, Chlorides, Molecular structure, Cesium compounds, Halides, Separation, Purification, Tantalum, Niobium, Thermochemistry, Precipitation, Chemical reactions, Uranyl radicals, Ions, Lithium compounds, Cyanides, Tungsten, Heat of formation, Bromides, Synthesis, Isomers, Oxidation, Ruthenium, Refractometers, Thorium compounds, Carbonates, Solubility, Silicon compounds, Molybdates, Water, Acids, Pyrolysis, Cerium, Rare earth elements, Valence, Chemical elements, Phase transitions, Iron alloys, Cobalt alloys, Palladium alloys, Prisms (Optics), Titanium compounds, Oxides, Solutions, Nickel compounds, Sulfates, Chemical equilibrium, Nitrates, Radiation effects, Cobalt, Radioactive isotopes, Tin, Titanium, Salts, Isotopes, Exchange reactions, Dolomite, Strontium, Radioactivity

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Amperometric investigations of the precipitation reactions of uranyl ions with lithium ferrocyanide, by G. A. Kleibs

Optical and tensimetric studies of the chlorine derivatives of hexavalent tungsten, by S. A. Shchukarev and others

III. Heats of formation of the hexavalent tungsten chloro-derivatives, by S. A. Shchukarev

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The hydrated forms of sodium thorium pentacarbonate, by I. I. Chernyaev and others

Preparation of sodium silicomolybdates and their study by the solubility method, by E. A. Nikitina and E. V. Buris

Thermographic investigation of sodium silicomolybdates, phosphotungstate and phosphomolybdate, by E. A. Nikitina and E. V. Buris

The preparation of ammonium luteophosphotungstates (phospho-9-tungstates) by E. A. Nikitina and N. A. Tsvetkov

The nature of water in tungsten heteropoly acids, by E. Ya. Rode

Thermographic investigation of the decomposition of formates of the cerium group rare-earth elements, by M. N. Ambrezhii and Yu. A. Osipova

I. Valency states of the elements of the first transition period in bis-cyclopentadienyl compounds, by E. M. Shustorovich and M. E. Dyatkina

Investigation of the alloys of the system iron-cobalt-palladium, by V. V. Kuprina and A. T. Grigor'ev

An inner section across the prism of the quaternary reciprocal system Na, K‖Cl, SO_4, CO_3, by A. G. Bergman and A. K. Sementsova

Polarographic study of the solution of titanium dioxide in melted sodium metaphosphate, by Yu. K. Delimarskii and T. N. Kaptsova
Investigation of the sodium tripolyphosphate-nickel sulfate-water system, by E. A. Prodan
Heterogeneous equilibria in the system $NaNO_3$-Na_2HPO_4-NaCl-H_2O at 25°, by A. V. Makin
Study of the system uranyl nitrate-8-oxyquinoline-water by the solubility method, by A. E. Klygin and N. S. Kolyada
Phase equilibria in the system Na_3PO_4-Na_2-SO_4-H_2O at 250°, by M. I. Ravich and L. F. Yastrebova
Investigation of the solubility in the system Li_2SO_4-Na_2SO_4-K_2SO_4-H_2O at 25°, by I. N. Lepeshkov
Solubility isotherm of the system ($2KCl + Na_2SO_4 \rightleftarrows K_2SO_4 + 2NaCl$)-$H_2O$ at 100, by E. I. Luk'yanova and G. N. Podzorei
Effect of $Co^{60}\gamma$-radiation on aqueous solutions of tin and titanium salts, by L. P. Sidorova
Study of the isotope exchange between the anions of some heteropoly acids, by E. A. Torchenkova and V. I. Spitsyn
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Does commercial H_2O_2 contain higher hydrogen peroxide?, by K. E. Mironov and M. S. Danilova
Structure of platinum carbonyl halides, by M. E. Dyatkina
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Fricke, R. and Weitbrecht, G.
DIMENSIONS OF PRIMARY AND SECONDARY PARTICLES OF SOME CRYSTALLINE FERRIC HYDROXIDES. Communication 66 on the Field of Active Solid Materials, [[1961] 4p. 17 refs.
Order from SLA $1.10 62-10358

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (Germany) 1943, v. 251, p. 424-428.

DESCRIPTORS: *Iron compounds, *Hydroxides, Particles, Crystals, Crystallization, Microanalysis, Microstructure.

Goubeau, J. and Epple, R.
THE THERMAL DECOMPOSITION OF TRIMETHYL BORON. [1961] 10p. (figs. omitted) 7 refs.
Order from SLA $1.10 62-10387

Trans. of [Chemische] Ber[ichte] (West Germany) 1957, v. 90 [no. 2] p. 171-[181].

DESCRIPTORS: *Boron compounds, Boron, *Methyl radicals, Pyrolysis

Hein, F. R. and Herzog, S.
CONTRIBUTION TO THE COORDINATION CHEMISTRY OF CHROMIUM FORMATION SECTION. [1961] 1p.
Order from SLA $1.10 62-10416

Trans. from Angewandte Chemie (West Germany) 1954 [v. 66, no. 19].

DESCRIPTORS: *Chemistry, *Chromium, Valence, Vanadium, Magnesium

Keler, E. K. and Andreeva, A. B.
EFFECT OF IMPURITIES AND TITANIUM DIOXIDE ADMIXTURES ON THE PROCESS OF STABILIZING ZIRCONIUM DIOXIDE (Vliyanie Primesei i Dobavok Dvuokisi Titana na Protsess Stabilizatsii Dvuokisi Tsirkoniya). 21 Sep 61 [14]p. (2 Eng. language refs. omitted) 8 refs. MCL-1423; AD-265 796.
Order from OTS or SLA $1.60 62-13166

Unedited rough draft trans. of Ogneupory (USSR) 1958, v. 23, no. 12, p. 552-558.

DESCRIPTORS: *Zirconium compounds, *Titanium compounds, *Dioxides, Impurities, Stability, Crystallization, Mechanical properties, Deterioration.

The presence of titanium dioxide promotes, in addition, coarse grain crystallization of zirconium dioxide, which also has a negative effect (deterioration) on the mechanical properties of the objects. An admixture of titanium dioxide of more than 0.3 - 0.5% should be considered as undesirable during the manufacture of solid and high-strength highly fire-resistant (refractory) objects from stabilized zirconium dioxide.

Mishin, V. D. and Kabanova, L. M.
THE REDUCTION AND SULPHIDATION OF OXIDISED COBALT COMPOUNDS (O Vosstanovlenii i Sul'fidirovanii Okislennykh Soedinenii Kobal'ta). Nov 61 [22]p. 4 refs. RTS 1896.
Order from OTS or SLA $2.60 61-28911

Trans. of Ural'skii Politekhnicheskii Institut [Sverlovsk]. Trudy (USSR) 1957, v. 58, p. 128-144.

DESCRIPTORS: *Cobalt compounds, *Oxides, Reduction, Slags, Calcium compounds, Sulfides, Chemical reactions.

The reduction conditions of pure cobaltous oxides, both simple and compound, were studied as a function of temperature and of duration of the treatment. Appreciable sulfidation of cobaltous oxide begins at about 700°; at 1000° the oxidised cobalt is almost completely (98%) converted to the sulfide. Cobaltous ferrite begins to react with calcium sulfide at a temperature above 600°; even at 1300°, however, the sulfidation is incomplete (90.3%). Sulfidation of the aluminate probably sets in at about 700°, that of cobaltous silicate at about 600°; however, even at 1300° these compounds are sulfided only to the extent of 70.5 and 73.3% respectively. Free cobaltous oxide and cobaltous ferrite were the easiest to sulfidize. Cobaltous aluminate and silicate undergo sulfidation in the solid phase, but the reaction does not go to completion even at 1300°. Sulfidation of cobalt compounds is possible even in an entirely neutral atmosphere. Oxidised cobalt may be sulfided by direct reaction with calcium sulfide, without involving metallic cobalt.

Zinoviev, A. A., Zakharova, I. A., and Kondratskaya, G. I.
COMPLEX ESTERS OF PERCHLORIC ACID AND SOME POLYATOMIC ALCOHOLS. [1961] 9p. 4 refs.
Order from OTS or SLA $1.10 61-18576

Trans. of Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1958, v. 3, no. 10, p. 2390-2394.

DESCRIPTORS: Glycols, Ethylenes, Alcohols, Glycerols, PETN, *Perchloric acid, Acids, *Esters, Synthesis.

Synthesis of complete and partial complex esters of ethylene glycol, glycerol and pentaerythritol and perchloric acid are reported. These complete and partial esters, obtained as mixtures, were found to be heavy liquids (sp. gr. > 1.7), difficulty soluble in water and quite soluble in diethyl ether. The corresponding complex esters of pentaerythritol were found to be colorless solids. Complex esters of ethylene glycol, glycerol and pentaerythritol and perchloric acid were found to be highly unstable materials which exploded with great violence upon heating, hitting or rubbing. (Author)

Organic Chemistry

RETICULATION OF EMULSION POLYMERISATES OF TRIFLUOROCHLORETHYLENE. [1961] 12p. (7 figs. 6 tables omitted) 1 ref.
Order from SLA $1.60 62-10003

Trans. of an unidentified article, pub. by Hoechst Dyeworks, Inc., 26 Apr 60.

DESCRIPTORS: *Fluorides, *Chlorides, *Ethylenes, Polymerization, *Polymers, Colloids, Salts, Precipitation.

Aqueous emulsions of polytrifluoroethylene which contain a water-soluble salt of a perhalogenated carboxylic acid as emulsifier can be precipitated out with the help of acids. When this occurs in the presence of chromium (III)-salts (chromium sulphate) there are obtained, after drying and short heat treatment, reticulated polymers with high NST- and ZST-values. There was investigated the quality of the polymers in dependence on the kind of the latices, the precipitation conditions and the processing conditions. A pretreatment of the emulsions with ozone manifests itself favorably on the reticulability of the polymerisate. (Author)

Atlas, S. M. and Mark, H. F.
HIGH TEMPERATURE POLYMERS. [1961] [26]p. 29 refs.
Order from SLA $2.60 62-10111

Trans. of Angewandte Chemie (West Germany) 1960, v. 72, no. 7/8, p. 249-[258].

DESCRIPTORS: *Polymers, *Heat resistant polymers, *High temperature research, Chemical reactions, Resins, Distilling plants, Decomposition, Stability, Organic materials, Production.

Avramenko, L. I., Ioffe, I. I. and Lorentso, R. V.
OVER DE REACTIE VAN ATOMAIRE ZUURSTOF MET BENZEEN (Reaction of oxygen atoms with benzene) 5p. 3 refs. MTWL: 584. (Text in Dutch).
Order from OTS or ETC $1.40 61-17299

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 66, p. 1111-1112.

DESCRIPTORS: *Benzenes, Oxygen, Atoms, Oxidation, *Phenols.

Azernikov, V.
'CENES. [1961] 3p. [DSIR NLL] M 4060.
Order from OTS or SLA $1.10 61-28210

Trans. of Nauka i Zhizn' (USSR) 1960 [v. 27] no. 11, p. 22-26.

DESCRIPTORS: *Ferrocenes, Molecular structure, Polymerization, Polymers, Electrons, Detonation.

The unusual structure of ferrocene is described as illustrating that of 'cenes in general.

Baker, J. W.
REACTION OF OLEFINS WITH THE CARBONYL GROUP: ADDITION OF OLEFIN TO PHENYL ISOCYANATE. [1961] 6p.
Order from SLA $1.10 62-10461

Trans. of [Sociedad Española de Fisica y Quimica. Anales (Spain) 1949, v. 45, p. 381-391].

DESCRIPTORS: *Ethylenes, *Carbonyl radicals, *Phenyl radicals, *Isocyanates, Cyanates, Chemical reactions, Addition reactions.

Balandin, A. A.
BOND ENERGY AND HETEROGENEOUS CATALYSIS. 9p. 19 refs. MTWL: 892
Order from OTS or ETC $1.55 61-17622

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 107, no. 1, p. 85-88.

DESCRIPTORS: *Catalysis, *Organic compounds, Chemical reactions, Energy.

Balandin, A. A., Spitsyn, I. and others.
RADIOACTIVE CATALYSTS. DEHYDRATION OF CYCLOHEXANOL OVER MAGNESIUM AND SODIUM SULPHATES. 9p. 8 refs. MTWL: 883.
Order from OTS or ETC $1.55 61-17629

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 121, no. 3, p. 495-498.

DESCRIPTORS: Sodium compounds, Sulfates, Magnesium compounds, *Cyclohexanols, *Humidity, Radioactivity, Catalysts, *Desiccants.

Batalin, A. Kh. and Shcherbakov, I. A.
THE HEAT OF REACTION OF SULFUR MONOCHLORIDE WITH METHYL AND ETHYL ALCOHOLS. [1961] 5p. 5 refs.
Order from OTS or SLA $1.10 62-10014

Trans. of Zhurnal Obshchei Khimii (USSR) 1940, v. 10, no. 8, p. 730-732.

DESCRIPTORS: *Ethanol, *Methanols, *Sulfur compounds, *Chlorides, *Heat of reaction.

Becke-Goehring, Margot and Koch, Günther.
CHARACTERIZING PHOSPHONITRILOCHLORIDES. [1961] 6p. (3 figs. 1 footnote omitted) 13 refs.
Order from SLA $1.10 62-10380

Trans. of [Chemische] Ber[ichte] (West Germany) 1959, v. 92, no. 5, p. 1188-[1195].

DESCRIPTORS: *Phosphonitrile chlorides, Chlorides, Molecular structure, Chemical reactions, Polymerization, Polymers, Rubber, Hydrolysis.

Bestian, Herbert.
SOME REACTIONS OF ETHYLENIMINE. 5 Dec 55, 17p. 49 refs.
Order from SLA $1.60 62-10017

Trans. of German language article from an unidentified source, n.d.

DESCRIPTORS: *Ethylenimines, Imines, Chemical reactions, Halogen compounds, Acylation, Alkyl radicals.

The reactions are divided into three groups for purposes of review: (1) acylation and alkylation with halogen compounds, (2) acylation and alkylation by addition, and (3) ring opening. (Author)

Bier, G.
HIGHMOLECULAR OLEFIN-MIXED-POLYMERISATES [1961] 1p.
Order from SLA $1.10 62-10018

Trans. of German language article from unidentified source, 1961 (?).

DESCRIPTORS: *Ethylenes, *Propenes, Polymerization, Catalysts, *Polymers.

See also 61-18648.

Dolezal, S.
ε-AMINOENANTHIC ACID, ITS LACTAM AND POLYAMIDE: POLYAMIDES FROM HIGHER ω-AMINO ACIDS. [1961] 13p.
Order from ATS $28.50 ATS-29N57C

Trans. of Chem[icke] Listy (Czechoslovakia) 1961, v. 55, no. 7, p. 777-788.

DESCRIPTORS: *Amino acids, *Enanthic acid, Acids, *Lactams, *Amides, *Polymers, Synthesis.

Eilingsfeld, Heinz, Seefelder, Matthias, and Weidinger, Hans.
AMIDE CHLORIDES AND CARBAMIDE CHLORIDES. [1961] [30]p. (1 table omitted) 50 refs.
Order from SLA $2.60 62-10408

Trans. of Angew[andte] Chem[ie] (West Germany) 1960, v. 72, no. 22, p. 836-845.

DESCRIPTORS: *Amides, *Urea, *Chlorides, Synthesis

A summary of the methods of preparation as well as application of these compounds is given. The commentary is concerned with the synthesis of alkyl chlorides, amide acetates, acid chlorides, thioamides, amidines, pyrimidines, chinazolines, anthrapyrimidines, nitrides, β-ketone acid amides and aliphatic-aromatic ketones. A generally applicable method of presentation is given for the up to now unknown carbamide chlorides. These compounds are raw materials for carbodimides, thioureas, urea acetates, carbamine acid orthoesters and guanidines. (Author)

Elias, Hans-George and Männer, Erich.
THE PROBLEM OF THE MEMBRANE IN OSMOTIC-PRESSURE MEASUREMENTS WITH HIGH POLYMERS. IV. ON THE INFLUENCE OF THE MOLECULAR-WEIGHT DISTRIBUTION AND ADDITIVES ON THE OSMOTIC PRESSURE IN PERMEABLE MEMBRANES (Das Problem der Membran bei Osmotischen Messungen an Hochpolymeren. IV. Über den Einfluss der Molekulargewichtsverteilung und von Zusätzen auf den Osmotischen Druck an Permeablen Membranen). [1961] [18]p. (foreign text included) 9 refs.
Order from SLA $1.60 62-10331

Trans. of Makromolekulare Chemie (Switzerland) 1960, v. 40, no. 3, p. 207-215.

DESCRIPTORS: *Polymers, Ethylenes, Glycols, Molecular weight, *Membranes, Permeability, *Osmotic pressure, Pressure, Measurement, Additives.

The influence of the molecular-weight distribution on the osmotic pressure in the initial state was investigated by measurements with polyethylene glycols of approximately equal average molecular weight in dimethylformamide on permeable membranes of Cellophane 600. The Staverman-effect is higher, the greater the spread of the molecular distribution. According to measurements with glass membranes, additives of a low-molecular substance (n-phenyl-β-naphthylamine) do not influence the osmotic pressure at higher polymer concentrations, but with a decrease in the total concentration higher deviations occur. A calculation shows that the Staverman effect is not additive and that higher as well as lower osmotic pressures are obtained depending on the total concentration and on the concentration of the additive, respectively. (Author) (See also 60-18412)

Fedotova, O. Ya., Losev, I. P. and others.
SYNTHESIS AND EXAMINATION OF AROMATIC POLYAMIDES. [1961] 7p. (3 figs. graphs equations omitted) 4 refs.
Order from OTS or SLA $1.10 62-10399

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2 [no. 6, p. 899-903].
Another trans. is available from ATS $8.60 as ATS-41M44R [1960] 5p.

DESCRIPTORS: *Polymers, *Amides, Synthesis, Heat tolerance, Stability, Analysis.

There was demonstrated the possibility of obtaining polyamides with a high thermostability, by means of the condensation of aromatic diamines with dimethyl ether of terephthalic acid. A study was made of the kinetics of the reaction of dimethyl ether of terephthalic acid with benzidine, tolidine, 4,4'-diaminodiphenyl-methane, and 4,4'-diamine-3,3'-dimethyldiphenylmethane, in which case, there were established the optimal conditions for the synthesis of polyamides with a high thermostability. The properties have been described, and a methol has been proposed for the treatment (reprocessing) of the obtained polymers. An indication has been given as to the character of the plasticizing action of a methyl bridge between the aromatic rings, and also of a substitute in the nucleus (in the diamine molecule) on the properties of the examined aromatic polyamides. (Author)

Filippov, B. S. and Gorodoĭ, G. P.
DE WISSELWERKING TUSSEN TEER EN STEENKOLENSOORTEN VAN HET KUZNIETSKER BEKKEN (Interaction Between Tar and Coal from the Kuznetz Basin) 15p. MTWL: 879. (text in Dutch).
Order from OTS or ETC $1.85 61-17625

DESCRIPTORS: *Coal tar, *Coal, Chemical reactions, Solutions.

Furukawa, Junji, Ohnishi, Akira, and Tsuruta, Teiji.
NEW SYNTHETIC METHOD OF N-VINYL SULFONIC AMIDE. Speech at the Japan Chemical Society Lecture Meeting (no. 9) 3 Apr 56. [1961] 5p.
Order from SLA $1.10 62-10378

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1956, v. 59, p. 1230.

DESCRIPTORS: *Sulfonamides, Amides, *Vinyl radicals, Synthesis, Toluenes, Methyl radicals, Alkyl radicals, Butyl radicals, Ethers, Chemical reactions, *Toluene sulfonamide

A new method is given for synthesizing of n-vinyl sulfonic amide, utilizing the reaction between n-alkyl sulfonic amide and vinyl ether.

Furukawa, Junji, Tsuruta, Teiji and others.
PROCESS FOR POLYMERIZATION OF α-OLEFINS BY THE MIXED CATALYST OF ORGANOMETALLIC COMPOUND AND SILICA-ALUMINA-TITANIA. 1961, 5p. 10 refs.
Order from SA $45.00

Trans. of published Japanese patent SHO 36-787, appl. no. SHO 34-213, by Japan Chemical Fiber Institute and Bridgestone Tire Co., Inc., appl. 10 Jan 58, pub. 17 Feb 61.

DESCRIPTORS: *Metalorganic compounds, Polymerization, *Ethylenes, Processing, *Alumina-silica catalysts, *Titanium compounds, Oxides, Chemical reactions, Mixtures, *Silicon compounds, Catalysts

This invention relates to a method of polymerizing α-olefine such as ethylene, propylene, 1-butene by using a reaction mixture of organometallic compound such as alkyl aluminum, alkyl cadmium with silica-alumina-titania. By this catalytic system these olefines can be easily polymerized. (Author)

Gachkovskii, V. F.
THE EFFECT OF MOLECULAR WEIGHT ON THE LUMINESCENCE OF HIGH MOLECULAR SUBSTANCES, tr. by I. Gawronska. 23 Feb 61, 5p. 2 refs. Courtaulds Misc. Lit. 3276; [DSIR LLU] M3165.
Order from OTS or SLA $1.10 61-27503

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 133, p. 1358-1360.

DESCRIPTORS: *Polymers, Acetylenes, Phenyl radicals, Acrylamides, Amides, Styrenes, Proteins, Amino acids, Nucleic acids, Acids, Molecular weight, Fluorescence, *Luminescence.

Qualitative investigations of polymers with very varied chemical constitutions, such as polymers with a continuous chain of conjugated bonds, polymers without such chains, polyphenyl acetylenes, poly-p-carbooxyphenylmethacryl amides, polystyrenes, polymethacrylates, proteins, amino acids, nucleic acids DNA and RNA etc., are described.

Goubeau, J.
MULTIPLE BONDS IN ORGANIC CHEMISTRY. [1961] [15]p. 20 refs.
Order from SLA $1.60 62-10383

Trans. of Angewandte Chemie (West Germany) 1957, v. 69, no. 3, p. 77-82.

DESCRIPTORS: Chemistry, *Organic compounds, *Chemical bonds.

Hardegger, E. and Nikles, E.
WILT SUBSTANCES AND ANTIBIOTICS INVESTIGATIONS IN THE PYRIDIN-SERIES; A NEW PASSAGE WAY TO FUSARIC ACID (Welkstoffe und Antibiotika Untersuchungen in der Pyridin-Reihe; Ein Neuer weg zur Fusarinsäure). [1961] [19]p. 25 refs.
Order from SLA mi$1.60 61-10535

Trans. of Helvetica Chimica Acta (Switzerland) 1956, v. 39, no. 2 [p. 505-513].

DESCRIPTORS: *Fusaric acid, Acids, Synthesis, Pyridines, *Antibiotics, Pyridine derivatives.

Alkalization of β-picolin (I) with alkylbromide leads with a good yield to the 3-n-alkyl-pyridine (propyl up to hexyl). The aminization of 3-n-butyl-pyridine (V) gives predominantly 2-amino 3-n-butyl-pyridine (VI) and a little 2 amino-5-n-butyl-pyridine (II). From

this there results a simple, although not very productive way for preparing fusaric acid (5-n-butyl pyridine-2-carbonic acid) (IV) from β-picolin. The constitution of the 2-amino 3-n-butyl pyridine (VI) is proven by the reduction to 2-brom or 3-hydroxy-nicotinic acid (X and XIV respectively) that are certain in their constitution. Attempts to obtain, from the readily accessible 5-iodine-2 amino-pyridine (XII) or its acetyl derivate (XIII) by reaction with butyllithium, and intermediate product suitable for conversion to fusaric acid led in average yield to 2 amino-pyridine and 2 well defined compounds (XVII, XVIII) whose constitution is not certain. Of all the compounds recorded in the scheme of formulas derivatives, usually picrates were prepared for characterization. (Author)

Hoch and Haaf.
SYNTHESIS OF BRANCHED CARBOXYLIC ACIDS BY THE FORMIC ACID METHOD. [1961] 13p. (refs. formulae omitted).
Order from SLA $1.60 62-10456

Trans. of [Justus Liebigs] Ann[alen der Chemie] (West Germany) 1958, v. 618, no. 1/3, p. 251-256.

Portions of this report will not reproduce well.

DESCRIPTORS: *Carboxylic acids, Acids, Synthesis, Ethylenes, Carbon compounds, Monoxides, Water, *Formic acids, Alcohols, Chlorides, Alkyl radicals, Esters, Cyclopentenes, Cyclopentanols, Pentenes, Pentanols, Cyclohexenes, Cyclohenanols, Chemical reactions, Monocyclic compounds.

Kageyama, I., Yasumura, J., and Satō, M.
EXTRACTIE VAN ACTIEVE BESTANDDELEN UIT PYRETHUM, DERRIS WORTEL, TABAK ENZ. (Extraction of Active Ingredient from Derris Root, Pyrethrum, and Tobacco) tr. by A. Schouten. 7p. MTWL: 905. (text in Dutch).
Order from OTS or ETC $1.55 61-17614

Trans. of Japanese patent application 1950-14559 (part of patent application 1950-7938), by Douwe Egberts, filed, 1952.

DESCRIPTORS: *Plants, *Solutions, *Liquified gases, Hydrocarbons, Chlorine compounds, Fluorides.

Kargin, V. A. and Sogolova, T. I.
EFFECT OF MOLECULAR WEIGHT ON THE MECHANICAL PROPERTIES OF CRYSTALLINE POLYMERS. 21 Feb 57 11p. (5 figs. omitted) 7 refs.
Order from OTS or SLA $1.60 61-20706

Trans. of [Zhurnal Fizicheskoi Khimii] (USSR) 1955, v. 29 [no. 3] p. 469-475.

DESCRIPTORS: Molecular weight, Mechanical properties, Polymers, *Ethylenes, *Amides, Stability, Molecular structure, Crystals.

It is shown that mechanical properties of crystalline polyethylene and polyamide are not dependent on molecular weight. The stability and tensile strength of crystalline material is dependent on molecular weight and, in the long chain molecule, enhances the interbonding among the crystals in the polymer. The deviation of character for linear polymers depends on the tensile strength as verified by the presence of branched polymers.

Kerber, Robert.
KINETIC INVESTIGATIONS ON THE FORMATION OF POLYMERIC PEROXIDES OF METHYL-METHACRYLATE, II. [1961] [15]p. 15 refs.
Order from SLA $1.60 61-20631

Trans. of Makromolekulare Chemie (Switzerland) 1960, v. 40, p. 39-54.

DESCRIPTORS: *Acrylic resins, *Peroxides, Phase transitions, Inhibition, Reaction kinetics, Catalysts, Copolymerization, Dielectric properties, Plastics, Polymers.

Experiments show that polar effects must be taken into account also in radical reactions.

Korshak, V. V. and Zamyatina, V. A.
POLYVINYL DERIVATIVES. II. POLYVINYL BUTYL ETHER. [1961] 4p. 11 refs.
Order from OTS or SLA $1.10 61-20112

Condensed trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 947-951.

DESCRIPTORS: *Vinyl radicals, *Polymers, *Butyl radicals, *Ethers, Polymerization, Catalysts.

The polymerization was studied of normal butyl vinyl ether in the presence or absence of sulfur dioxide, as influenced by the following catalysts: iodine, stannous chloride, stannic chloride, aluminum chloride, ferric chloride and boron fluoride. The reaction temperature was varied from -55 to 60°. The polymers obtained were viscous, very tacky liquids, insoluble in alcohol or water, but soluble in ether and benzene. Preliminary data show their molecular weights to be of the order of 5,000. Oxidation of the polymer of vinyl n-butyl ether yields butyric and oxalic acids, revealing it to be a derivative of a 1,3-glycol. The butyl groups of the polymer can be removed by hydrolysis, leaving a polyvinyl alcohol. They also can be partly substituted by acetyl groups. (Author)

Korshak, V. V., Mozgova, K. K., and Shkolina, M. A.
PREPARATION OF GRAFT COPOLYMERS. III. GRAFTING OF VINYL MONOMERS TO POLYAMIDES. [1960] 6p. 6 refs. MDF K-208.
Order from OTS $0.50 62-11493

Trans. of Vysokomolekul[yarnye] Soedin[eniya] (USSR) 1959, v. 1, no. 9, p. 1364-1368.

DESCRIPTORS: *Polymers, *Amides, Polymerization, Copolymerization, Vinyl radicals, Acetates, Styrenes, Chlorides, Acrylonitriles.

Results showed that graft copolymers are formed in the interaction of ozonized polyamide films and fibers of capron, enanth, anide (a polyamide of hexamethylene diamine and adipic acid), and anide G-669(Doklady

Akad. Nauk SSSR 97: 675, 1954) with vinyl monomers, styrene, methyl metacrylate, vinyl acetate, vinylindens chloride, and acrylonitryl. The yield of graft copolymer increased as the sorption capacity of the polyamide increased and as its degree of orientation decreased. (See also 59-17628)

Korshak, V. V., Polyakova, A. M., and Suchkova, M. D.
SYNTHÈSES DES COMPOSÉS VINYLIQUES DU PLOMB ET RECHERCHE DE LEUR POLYMÉRISATION [The Synthesis of Vinyl Compounds of Lead and a Study of their Polymerization] tr. by Szyszman. [1961] [22]p. 10 refs. CEA Trans. R 1413 (text in French).
Order from OTS or SLA $2.60 62-13807

Trans. in French of Vysokomol[ekulyarnye] Soed-[ineniya] (USSR) 1960 [v. 2] no. 1, p. 13-19.

DESCRIPTORS: Synthesis, *Vinyl radicals, Dioxides, Decomposition, *Polymerization, Copolymerization, Styrenes, Ethyl radicals *Lead compounds, Methyl radicals.

On prepare les composés de plomb non decrits dans la bibliographie et notamment : le plomb-triethylvinyle et le plomb diethyldivinyle. On étudie leur capacité à la polymerisation. Ces composés sont très instables et se décomposent en donnant du plomb métallique sous l'action de l'entameur à peroxyde à la température de 120 ou 130°. On obtient des produits de copolymérisation du plomb-triéthylvinyle avec le styrolène et le méthylstyrolène qui contiennent de 4, 5 à 6 pour cent de plomb. (Author)

Koton, M. M., Kiseleva, T. M., and Florinskii, F. S.
METAL-CONTAINING STYRENES. 17 Mar 61 [2]p. (1 ref. omitted).
Order from OTS or SLA $1.10 61-20767

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim-[icheskikh] Nauk. Izvest[iya] 1959 [no. 6] p. 958.

DESCRIPTORS: *Styrenes, Preparation, Liquids, Polymerization, Copolymerization, Plastics, Metals.

Koton, M. M., Kaseleva, T. M., and Florinskii, F. S.
PREPARATION AND POLYMERIZATION OF UNSATURATED COMPOUNDS CONTAINING METALS. [1961] 8p. 10 refs.
Order from OTS or SLA $1.10 61-20056

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2, no. 11, p. 1639-1644.

DESCRIPTORS: *Metalorganic compounds, Preparation, Polymerization, Copolymerization, Reaction kinetics.

A number of unsaturated organometallic compounds (methacrylates and styrenes containing tin, lead, mercury) were prepared and their polymerization and copolymerization mechanisms were studied. A benzene ring or a carboxyl group between the vinyl group and metal atom enhanced the polymerization of such unsaturated monomers containing metals and promoted copolymerization with vinyl monomers. (Author)

Koton, M. M.
SYNTHESIS OF HIGHMOLECULAR COMPOUNDS WITH INDUCED PROPERTIES. 25 Sep 61 [12]p. JPRS: 10279.
Order from OTS or SLA $1.60 61-28736

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 1, p. 19-26.

DESCRIPTORS: *Polymers, Synthesis, Molecular structure, Physical properties, Polymerization, Condensation reactions, Chelate compounds, Fluorine, Organic compounds, Inorganic compounds.

The present status of the problem of synthesis of polymers with induced properties testifies to the great progress in this important field of the chemistry of highmolecular compounds. (Author)

Kovats, J.
"DIEPMETHODE " VOOR HET VERVAARDIGEN VAN HET CITROENZUUR (Production of Citric acid by Submerged Fermentation). 9p. 9 refs. MTWL: 958. (Text in Dutch).
Order from OTS or ETC $1.55 61-17548

Trans. of Przemysl Spozwyczy (Poland) 1958, v. 8, no. 12, p. 303-306.

DESCRIPTORS: *Citric acid, Production, Processing.

Kozaki, Shigeru, Kido, Tsunekazu and others.
EXTRACTION OF PHENOL WITH AQUEOUS SODIUM XYLENESULFONATE SOLUTIONS. Pt. 1 of the Extraction of Coal-Tar Acids with Hydrotropic Solutions. [1961] 22p. (8 figs. omitted) 45 refs.
Order from SLA $2.60 61-20939

Trans. of Kogyo Kagaku Zasshi (Japan) 1955, v. 58, p. 307-312.

DESCRIPTORS: Coal tar, Acids, Hydrocarbons, *Phenols, Solvent extraction, Solubility, *Sodium compounds, *Xylenes, *Sulfonates, Organic solvents, Solvent action.

Measurement of the solubilities of 17 different phenols and hydrocarbons in 30% aqueous sodium xylenesulfonate solution showed the phenols to be extremely soluble in this solvent, while in contrast the solubilities of all the hydrocarbons tested in this solvent did not differ greatly from their solubilities in pure water. This property was utilized experimentally to effect the selective extraction of phenol from phenol-toluene mixtures with aqueous sodium xylenesulfonate solutions. A 10% aqueous solution of this compound was found to be suitable for this purpose. The equilibrium diagram of the system phenol-toluene-10% aqueous sodium xylenesulfonate solution was constructed, and the extraction equilibrium diagram drawn for the single-stage extraction of a phenol-toluene mixture containing 20 vol.

% of phenol at various solvent ratios. The phenol extraction yields were found for single-stage and multi-stage extraction, showing the advantage to lie on the side of multi-stage extraction. For example, the phenol extraction yield in a four-stage extraction at solvent ratio 1:1 was 95.9%. (Author) (Paper read before the Seventh Annual Meeting of the Chemical Society of Japan, April 3, 1955).

Kozlov, V. V.
ONDERZOEKINGEN OP HET GEBIED DER DIAZOVERBINDINGEN. I. DE DIAZOTERING VAN AMINEN MET BEHULP VAN STANNOVERBINDINGEN (Diazo compounds. I. Diazotization of amines in the presence of bivalent Sn salts). 13p. 13 refs. MTWL: 682. (Text in Dutch).
Order from OTS or ETC $1.85 61-17367

Trans. of Zhurnal Obshchei Khimii (USSR) 1937, v. 7, p. 1635-1644.

DESCRIPTORS: Amines, *Azo radicals, Tin compounds Chemical reactions.

Kozyrev, B. M.
PARAMAGNETIC RESONANCE ABSORPTION METHOD IN THE MAGNETOCHEMISTRY OF ORGANIC COMPOUNDS. 8p. 4 refs. MTWL: 585.
Order from OTS or ETC $1.55 61-17300

Trans. of Akademiya Nauk SSSR, Doklady, 1951, v. 81, no. 3, p. 427-430.

DESCRIPTORS: *Organic compounds, Absorption, *Paramagnetic resonance, Chemical bonds.

Kurko, V. I.
DE ANTIOXYDERENDE EIGENSCHAPPEN VAN ROOKCOMPONENTEN IN ROOK (Antioxidative Properties of the Smoke Components) tr. by R. Belz. 8p. MTWL: 927. (Text in Dutch).
Order from OTS or ETC $1.55 61-17581

Trans. of Myasnaya Industriya (USSR) 1959, y. 30, no. 3, p. 19-21.

DESCRIPTORS: Smokes, Antioxydants, *Phenols, *Food.

Inoue, Yoshiyuki, Hamada, Katsu, and Yokota, Shuko.
STUDIES ON THE PREPARATION OF ORGANIC ACIDS. VIII. MANUFACTURE OF PHTHALIC ANHYDRIDE BY THE GAS-PHASE OXIDATION OF NAPHTHALENE. [1961] [22]p. (foreign text included) 7 refs.
Order from SLA $2.60 62-10025

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) 1943, v. 19, p. 809-815.

DESCRIPTORS: *Organic acids, Synthesis, *Phthalic anhydride, *Naphthalenes, Gases, Oxidation, Phase studies.

Levina, R. Ya., Skvarchenko, V. R., and others.
SYNTHESE VAN KOOLWATERSTOFFEN. X. GEDEELTELIJKE REDUCTIE VAN DIEENKOOLWATERSTOFFEN MET EEN GECONJUGEERD SYSTEEM VAN DUBBELE BINDINGEN MET NATRIUM IN VLOEIBARE AMMONIAK. (Synthesis of Hydrocarbons. X. Partial Reduction of Diene Hydrocarbons with a Conjugated Double Bond System by Means of Sodium in Liquid Ammonia). 11p. 13 refs. MTWL: 358. (text in Dutch).
Order from OTS or ETC $1.55 61-17619

Trans. of Zhurnal Obshchei Khimii (USSR) 1950, v. 20, no. 4, p. 684-689.

DESCRIPTORS: *Hydrocarbons, *Reduction, Sodium, Ethylenes, Ammonia, Liquids.

Markacheva, T. M. and Lebedeva, G. N.
HET BEREIDEN VAN NICOTINEZUUR UIT DE ZWARE BASEN VAN STEENKOLENTEER (Preparation of Nicotinic Acid from the Heavy Bases of Coal Tar). 12p. 1 ref. MTWL: 352. (Text in Dutch).
Order from OTS or ETC $1.85 61-17562

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1950, v. 23, no. 3, p. 299-305.

DESCRIPTORS: *Coal Tar, *Nicotinic Acid, Preparation, Pyridine derivatives.

Natta, G., Pino, P. and others.
SYNTHESIS AND PROPERTIES OF CRYSTALLINE HIGH POLYMERS OF SOME BRANCHED-CHAIN α-OLEFINS. 13p. 6 refs. MTWL: 857/1.
Order from OTS or ETC $1.85 61-17350

Trans. of Accademia Nazionale dei Lincei. Atti. Classe di Scienze, Fisiche, Matematiche e Naturali. Rendiconti (Italy) 1955, ser. 8, v. 19, p. 397-403.

DESCRIPTORS: *Polymers, Crystals, *Ethylenes, Synthesis, Physical properties.

Natta, G., Pino, P., and Mazzanti, G.
SYNTHESIS AND STRUCTURE OF SOME CRYSTALLINE POLYHYDROCARBONS CONTAINING ASYMMETRIC CARBON ATOMS IN THE MAIN CHAIN. 20p. 15 refs. MTWL: 858.
Order from OTS or ETC $1.85 61-17351

Trans. of Chimica e Industria (Italy) 1955, v. 37, p. 927-932.

DESCRIPTORS: *Hydrocarbons, Crystals, Crystal structure, Synthesis, *Polymers.

Naudet, M., Sambuc, E., and Desnuelle, P.
STUDY OF THE AMINOLYSIS OF GLYCERIDES IN THE PRESENCE OF ETHANOLAMINE IN LESS THAN STOICHIOMETRIC AMOUNTS. [1961] 7p.
Order from ATS $10.45 ATS-17N56F

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1952 [Ser. 5, v. 19] p. 476-480.

DESCRIPTORS: *Glycerol esters, Decomposition, *Amines, *Ethanols, Chemical reactions.

Nekrasova, V. A.
THERMAL CHLORINATION OF ALKANES AND THEIR MONOCHLORO DERIVATIVES. 6p. 6 refs. MTWL: 730.
Order from OTS or ETC $1.55 61-17313

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 88, no. 3, p. 475-478.

DESCRIPTORS: *Hydrocarbons, Chlorination.

Nikolaeva, A. D. and Nikolaev, V. S.
GIL'M KHAIREVICH KAMAI. 1 Nov 61 [11]p. 49 refs. JPRS: 10906.
Order from OTS or SLA $1.60 62-13438

Trans. of #Zhurnal Obshchei Khimii (USSR) 1961, v. 31, no. 7, p. 2085-2089.

DESCRIPTORS: Scientific personnel, Personnel, *Chemists.

Petrov, A. A. and Sopov, N. P.
RESEARCH OF CONJUGATED SYSTEMS. XXVI. SYNTHESIS AND PROPERTIES OF 1-CHLORO-1, 3-BUTADIENE. [1961] 8p. 21 refs.
Order from OTS or SLA $1.10 61-20150

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 981-987.

DESCRIPTORS: *Chloroprenes, Synthesis, *Alkoxy radicals, Dienes, *Bromine, *Halogens, *Anhydrides, *Sodium compounds, *Hydroxides, *Potassium compounds, Chemical reactions, Butadienes.

1-Chloro-1, 3-butadiene was prepared in pure state for the first time by the action of caustic potash on 1, 4-dichloro-2-butene. The reaction of 1-chloro-1, 3-butadiene to bromine, alkyl hypoiodites and maleic anhydride and its tendency toward spontaneous and toward thermal polymerization were investigated. 1-Chloro-1, 3-butadiene was shown to be suitable for use in synthesis of 1-chloro-3-alkoxy-1, 3-butadienes; the newly synthesized 1-chloro-3-methoxy-1, 3-butadiene is described. (Author)

Ravich, G. B. and Vol'nova, V. A.
PHASENDIAGRAMM DES STEARIN-, PALMITIN- UND OLEIN- SAURENSYSTEMS (Phase Diagram of the System of Stearic, Palmitic, and Oleic Acids) 8p. MTWL: 881. (text in German).
Order from OTS or ETC $1.55 61-17627

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 86, p. 325-327.

DESCRIPTORS: Oleic acids, Stearic Acids, *Fatty acids, *Phase studies.

Rodionov, A. N., Talalaeva, T. V. and others.
FREE RADICAL ADDITION OF ALCOHOLS TO ACRYLIC ACID AND ITS METHYL ESTER: SYNTHESIS OF γ-LACTONES, tr. by I. Gawronska.
10 Apr 61, 6p. 9 refs. Courtaulds Misc. Lit. 3292; [DSIR NLL] M3264.
Order from OTS or SLA $1.10 62-15247

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136, no. 2, p. 360-363.

DESCRIPTORS: *Alcohols, *Acrylic acids, Acids, *Esters, *Methyl radicals, Addition reactions, *Free radicals, *Lactones, Synthesis.

Rogovin, Z. A., Khaĭt, E. and others.
ONDERZOEKINGEN OP HET GEBIED VAN DE POLYMERISATIE VAN INSTABIELE RINGVERBINDINGEN. II. POLYMERISATIE VAN CAPROLACTAAM IN AANWEZIGHEID VAN KLEINE HOEVEELHEDEN WATER (Polymerisation of Unstable Cyclic Compounds. II. Polymerization of Caprolactam in the Presence of Small Amounts of Water) tr. by G.J.M. Fritschy. 8p. 2 refs. MTWL: 896. (text in Dutch).
Order from OTS or ETC $1.55 61-17605

Trans. of Zhurnal Obshchei Khimii (USSR) 1947, v. 17, p. 1316-1320.

DESCRIPTORS: *Polymerization, *Heterocyclic compounds, Organic compounds, Organic acids, Amides, *Resins.

Shuykin, N. I. and Levitskii, I. I.
ON PREPARATION OF STYRENE BY CATALYTIC DEHYDROGENATION OF THE ETHYLCYCLOHEXANE FRACTION OF MAIKOP GASOLINE (O Poluchenii Stirola Kontaktno-Kataliticheskoi Degidrogenizatsiei Etiltsiklogeksanovoi Fraktsii Maikopskovo Benzina). [1961] 13p. 13 refs.
Order from OTS or SLA $1.10 61-20958

Trans. of #Akademiya Nauk SSSR. [Otdelenie Khimicheskikh Nauk]. Izvestiya, 1952, no. 3, p. 498-504.

DESCRIPTORS: *Gasoline, *Cyclohexanes, Hexanes, *Ethyl radicals, Fractionation, Dehydrogenation, Catalysts, Catalysis, *Styrenes, Synthesis.

Conditions of catalytic dehydrogenation of the ethylcyclohexane fraction (127-134°) of Maikop gasoline, with formation of styrene, in contact with a vanadium aluminate cayalyst, were investigated. Data were obtained for dehydrogenation to styrene, under various conditions, both of the aforementioned fraction and of the catalysis product obtained by straight dehydrogenation of the six-membered cyclanes present (ethylcyclohexane and dimethylcyclohexanes) by means of platinized charcoal at 300°, as well as of the ethylbenzene-xylene concentrate separated from that product. It was found that as a result of dehydrogenation of the ethylcyclohexane fraction, as well as of the product of its catalytic aromatization at 300°, 11 to 14% styrene is formed. The yields of styrene in catalytic dehydrogenation of the ethylbenzene-xylene concentrate amount to as much as 22-23%. Previous aromatization of the original fraction does not have any appreciable effect on the results of its high-temperature dehydrogenation. (Author)

Sierbin, R.
SULFONATION OF BENZENE. [1961] 11p. (6 figs. omitted) 17 refs.
Order from SLA $1.60 61-20952

Trans. of Przemysl Chemiczny (Poland) 1953, v. 9[32] p. 72-76.

DESCRIPTORS: *Benzenes, Sulfonation.

The most commonly employed process of sulfonation of benzene vapor is characterized by high coefficient of utilization of H_2SO_4. Equipment intended for the method of emulsifying liquid benzene may, by modifications requiring only minor investment, be converted for sulfonation of benzene vapor by the Zakharov process. (Author)

Slyusarov, A. T. and Gershuns, A. [P.].
SYNTHESIS OF THE GALLIC ACID ANILIDES (Sintez Anilidov Gallovoi Kisloty). [1961] 7p. 12 refs.
Order from OTS or SLA $1.10 61-16568

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1960, v. 26, no. 3, p. 364-367.

DESCRIPTORS: *Gallic acid, Anilides, Organic acid, Acids, Synthesis, Chlorides, Chemical reactions.

By the condensation of galloyl chloride with para substituted anilines nine anilides of gallic acid were obtained, seven of which are not found described in the literature. (Author)

Syrkin, Ya, K.
CYCLIC SIX-MEMBERED ACTIVE COMPLEXES IN ORGANIC CHEMISTRY. 16p. 20 refs. MTWL: 912.
Order from OTS or ETC $1.85 61-17595

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1959, no. 2, p. 238-246.

DESCRIPTORS: *Organic compounds, Complex compounds, Monocyclic compounds, *Chemical reactions.

Terent'ev, A. P. and Mogilyanskiĭ, Ya. D.
THE PYRIDINE-CUPROUS CHLORIDE COMPLEX AS AUTOXIDATION. I. Preparation of Azo Compounds from Primary Aromatic Amines. 7p. 6 refs. MTWL: 882.
Order from OTS or ETC $1.55 61-17628

Trans. of Zhurnal Obshchei Khimii (USSR) 1958, v. 28, no. 7, p. 1959-1962.

DESCRIPTORS: *Amines, Benzenes, Azo radicals, Phenyl radicals, *Oxidation, Pyridines, Copper compounds, Chlorides, Catalysts.

Topchiev, A. V., Krentsel', B. A. and others.
THE PREPARATION OF CRYSTALLINE POLYPROPYLENE BY POLYMERISATION OF PROPYLENE OVER AN ORGANOMETALLIC CATALYST. 7p. 2 refs. MTWL: 838.
Order from OTS or ETC $1.55 61-17360

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 114, no. 1, p. 113-115.

DESCRIPTORS: *Propenes, *Polymerization, Crystals, Metalorganic compounds, Catalysts.

Topchieva, K. V., Ballod, A. P. and others.
CONVERSION OF CYCLOHEXENE ON ALUMINOSILICATE CATALYSTS WITH VARYING AL_2O_3 AND SiO_2 CONTENTS UNDER NON-CRACKING CONDITIONS. SELECTIVE POISONING WITH Na IONS. 10p. 18 refs. MTWL: 740.
Order from OTS or ETC $1.55 61-17285

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1954, no. 3, p. 478-483.

DESCRIPTORS: *Alumina-Silica catalysts, *Cyclohexenes, Disproportionation, Polymerization, Sodium, Ions, Poisoning.

Tyuryaev, I. Ya., Mukhina, T. N. and others.
THE RATES OF THE REACTIONS PROCEEDING UPON DEHYDROGENATION OF PROPENE OVER A FIXED CATALYST. 12p. 10 refs. MTWL: 908.
Order from OTS or ETC $1.85 61-17600

Trans. of Khimiya i Tekhnologiya Topliva i Masel (USSR) 1958, no. 12, p. 9-15.

DESCRIPTORS: *Propanes, *Dehydrogenation, Catalysts, Hydrocarbons, Decomposition.

Vvedenskii, A. A., Dobronravov, R. K., and Frost, A. V.
KINETICS AND MECHANISM OF CATALYTIC HYDROGENATION OF HYDROCARBONS, II. [1961] 6p. 7 refs.
Order from OTS or SLA $1.10 61-20161

Trans. of Zhurnal Obshchei Khimii (USSR) 1946, v. 16, p. 71-76.

DESCRIPTORS: *Hydrocarbons, Hydrogenation, Catalysis, *Benzenes, *Cyclohexanes, *Reaction kinetics.

In hydrogenation of benzene over palladium black at 240° and atmospheric pressure the rate of hydrogenation is independent of the partial pressure of benzene within the limits of 0.1-0.45 atm. Hydrogenation of benzene under the above conditions is retarded by cyclohexane long before the reaction mixture approaches equilibrium. (Author)

Yur'ev, Yu. K. and Bugorkova, A. A.
CATALYTIC CONVERSION OF FURANIDINE PYRROLIDINE AND THIOPHANE. XXII. 7p. 2 refs. MTWL: 830.
Order from OTS or ETC $1.55 61-17389

Trans. of Zhurnal Obshchei Khimii (USSR) (1949) v. 19, no. 4, p. 720-723.

DESCRIPTORS: *Thiophanes, *Pyrroles, *Furan, Chemical reactions, Catalysis.

Yur'ev, Yu. K. and Gragerov, I. P.
CONVERSION OF α- AND β-ALKYLFURANIDINES INTO THE CORRESPONDING THIOPHANES XXIII. 10p. 10 refs. MTWL: 828.
Order from OTS or ETC $1.55 61-17387

Trans. of Zhurnal Obshchei Khimii (USSR) 1949, v. 19, no. 4, p. 724-729.

DESCRIPTORS: *Furan derivatives, *Thiophanes, Chemical reactions, Catalysis.

Zal'kind, Yu. and Markov, I.
SOME CYCLOPENTANE DERIVATIVES. 9p. 15 refs. MTWL: 619.
Order from OTS or ETC $1.55 61-17364

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1938, v. 9, no. 5, p. 818-822.

DESCRIPTORS: *Cyclopentanes, Preparation.

Zhdanov, A. K.
INCREASE OF ENTROPY IN THE FORMATION OF AZEOTROPIC MIXTURES, II. [1961] 5p. 7 refs.
Order from OTS or SLA $1.10 61-20143

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 587-590.

DESCRIPTORS: *Entropy, *Mixtures, Boiling, Alcohols, Heat of formation.

On the basis of data for thermal expansion, latent heats of evaporation and heat capacity under constant pressure formulas were derived for the determination of the change of entropy accompanying formation of each of the following azeotropic mixtures: (1) benzene-isobutyl alcohol; (2) carbon disulfide-acetone; (3) carbon disulfide-isopropyl alcohol; (4) carbon disulfide-ethyl acetate. The numerical value of the change of entropy connected with interaction of molecules of the components of azeotropic mixtures was determined. (Author)

Zonis, S. A. and Pesina, A. G.
MANGAAN-ACETAAT ALS OXYDATIEMIDDEL VAN ORGANISCHE VERBINDINGEN. I. DE OXYDATIEREACTIE VAN α-GLYCOLEN (Manganese Tetraacetate as an Oxidizer of Organic Compounds. I. The Reaction of Oxidation of α-glycols). 14p. 9 refs. MTWL:351. (Text in Dutch).
Order from OTS or ETC $1.85 61-17561.

Trans. of Zhurnal Obshchei Khimii (USSR) 1950, v. 20, no. 7, p. 1180-1186.

DESCRIPTORS: Organic compounds, *Manganese compounds, Acetates, *Oxidizers, Glycols.

Zoroastrova, V. M. and Arbuzov, B. A.
THE ACTION OF HALOGEN-SUBSTITUTED ETHYLENE ON BUTADIENE AND ANTHRACENE. 6p. 1 ref. MTWL: 588.
Order from OTS or ETC $1.55 61-17303

Trans. of Akademiya Nauk SSSR. Doklady, 1948, v. 60, no. 1, p. 59-61.

DESCRIPTORS: Anthracenes, *Ethylene derivatives, Butadienes, *Halogen compounds, Chemical reactions.

ELECTROLYSIS OF CHLORIDE-SOLUTIONS IN PARTICULAR THE CHLORINE-ALKALINE-ELECTROLYSIS. 9 Oct 61 [17]p.
Order from SLA $1.60 61-20867

Trans. of unidentified German mono. (abstracts of papers) Prepared for the meeting to be held in Frankfort-Hoechst, 5-6 Oct 61.

DESCRIPTORS: *Chlorine, Production, *Electrolysis, Electrolytes, Electric currents, Sources, Oxygen, Hydrogen, Electrodes, Cathodes, Mercury alloys, Decomposition, Energy, Anodes, Oxidation-reduction reactions, Impurities, *Chlorides, *Potassium. compounds, *Hydrochloric acid, Acids, *Chlorates, *Perchlorates, *Alkali metal compounds, Electrochemistry.

Contents:
The present stand and the latest developments on the aqueous chlorine-alkaline-electrolysis, by K. Hass
Measurings in the chlorine-alkali-electrolysis, by H. J. Antweiler
Modern sources of current for the chlorine-electrolysis, by G. Reinhardt
Recovering of energy in the chlorine-alkali-electrolysis by using a reversible hydrogen or oxygen electrode as main-cathode, by W. Vielstich
Process for an electrical utilization of the decomposition energy of amalgam in the alkali-chlorine-electrolysis, by L. Kandler
Various shapes and materials of construction for electrodes used in the chlorine-alkaline-electrolysis, by F. Jeitner
Problems and theories of reactions on passivated metallic anodes, by K. Vetter
About the influence of trace amounts of impurities in the brines and in the mercury cathode on the yield of the chlorine-alkaline-electrolysis, by F. Holzinger
The hydrogen overvoltage on mercury-electrodes related to the chlorine-alkali-electrolysis, by G. Hauck
The KCl-electrolysis, by H. Ottersky
The HCl-electrolysis, by H. Hoelemann and J. Schuecker
The chlorate-electrolysis, by R. Bauer
Perchlorate-electrolysis, by A. Legendre.

JOURNAL OF APPLIED CHEMISTRY, 1940, VOL. 13, NO. 9:
[TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 14p. 34 refs.
Order from OTS or SLA $1.60 61-20366

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1940, v. 13, no. 9, p. 1340-1354, 1369-1374, 1406-1413.

DESCRIPTORS: Chemistry, Abstracting, *Copolymerization, *Acetylenes, *Butenes, *Electric discharges, *Butanols, Oxidation, Electrical properties, Lubrication, Oils, Synthesis, Cyclopentadiene.

Contents:
Copolymerization of acetylene and butene in silent electrical discharges, by A. D. Petrov and

D. N. Andreev
Electro-chemical oxidation of primary normal butyl alcohol, II, by I. I. Radchenko
Properties of synthetic lubricating oils. I. Synthesis and properties of 11-normal decyldocosane, by S. Klos and others
Quantitative determination of cyclopentadiene, by A. V. Kirsanov and others.

[JOURNAL OF PHYSICAL CHEMISTRY OF THE USSR] 1941, VOL. 14, NO. 4: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 5p. 11 refs.
Order from OTS or SLA $1.10 61-20470

Abstract trans. of Acta Physicochimica U. R. S. S., 1941, v. 14, no. 4, p. 451-482, 523-546, 564-567.

DESCRIPTORS: *Physical chemistry, Abstracting, Indexes, *Flames, *Acetaldehydes, Aldehydes, Oxidation, Chain reactions, *Carbon, Electrophoresis, Nitrogen, Glycols, Combustion, Lubrication, *Oils, Viscosity, Pressure, Anilines, Films, Luminescence, Temperature, *Spectrographic analysis.

Contents:
Dependence of the induction period of the cool flame of acetaldehyde on the composition of the mixture, by N. P. Keier and M. B. Neuman
The electrokinetic behavior of carbon, by Natalia Bakh
Combustion of nitroglycol, by A. F. Belaev
A note concerning the article entitled "On the effect of pressure up to 1,000 kg./sq. cm. on the viscosity of highly viscous liquids such as lubricating oils, by M. Volarovich
A correction to the paper "Spectral investigation of chemical processes in organic compounds at low temperatures, II., by A. Terenin.

[JOURNAL OF PHYSICAL CHEMISTRY OF THE USSR] 1942, VOL. 16, NO. 1/2: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 9p. 15 refs.
Order from OTS or SLA $1.10 61-20321

Abstract trans. of Acta Physicochimica U. R. S. S., 1942, v. 16, no. 1/2, p. 26-33, 63-87, 120-122.

DESCRIPTORS: *Physical chemistry, Abstracting, Periodicals, Indexes, Phase studies, Thermodynamics, Chemical equilibrium, Chemical reaction, *Oxygen, Isotopes, Colloids, *Oils, Adsorption *Raman spectroscopy, Chemical bonds.

Contents:
Kinetics of formation of two-phase systems near the critical point, by O. Todes and Ya. Zel'dovich
Research on the mechanism of chemical reactions with the aid of oxygen isotopes. II. Mechanism of the Beckmann rearrangement, by G. Miklukhin and A. Brodskii
Investigation of spontaneously formed emulsions; Mechanism of formation of soluble oils, Adsorption layers in dispersed systems, by K. Pospelova and P. Rebinder
The intensity of Raman lines and the nature of the chemical bond, by M. Vol'kenshtein.

[JOURNAL OF PHYSICAL CHEMISTRY OF THE U. S. S. R.] 1942, VOL. 17, NO. 1/2: [TABLE OF CONTENTS] AND SELECTED ABSTRACT. [1961] 4p. 6 refs.
Order from OTS or SLA $1.10 61-20320

Abstract trans. of Acta Physicochimica U. R. S. S., 1942, v. 17, no. 1/2, p. 55-72.

DESCRIPTORS: *Physical chemistry, Abstracting, Periodicals, Indexes, Fatty acids, Acids, Glycerol esters, Esters, Viscosity, Viscosimeters.

Contents:
Viscosimetric investigation of higher fatty acids and triglycerides, by G. B. Ravich.

Akimov, I. A.
ON THE LUMINESCENCE OF DYESTUFFS ADSORBED ON CERTAIN SEMICONDUCTORS. [1961] 4p. 19 refs.
Order from OTS or SLA $1.10 61-20983

Trans. of Russian language article from unidentified source, n. d.

DESCRIPTORS: *Luminescence, *Semiconductors, *Adsorption, *Dyes, Silver compounds, Halides, Intensity.

Fluorescein eosin, erythrosine, rhodamine B extra, methylene blue, chlorophyll, magnesium phthalocyanine, 3, 3'-diethylthiatricarbocyanineiodide, 3, 3'-9-triethyl-4, 5, 4', 5'-dibenzothiacarbocyaninebromide and 3, 3'-diethyl-5, 5'-dinitrothiacarbocyanine -p tolusolfonate did not luminesce in an adsorbed condition on ZnO, PbO and on the halides of silver and thallium. However, adsorbed on MgO, BaO, TiO_2, paper, cotton, gelatin and polyvinyl lacquer the possessed an intense luminescence. The intensity of luminescence of the fluorescein and rhodamine B solutions in water or in ethanol with a concentration of 10^{-6} M/liter, diminishes insignificantly upon the addition of only KJ or only $AgNO_3$ with a concentration of 10^{-4} M/liter. Upon the simultaneous introduction into the solution of KJ and $AgNO_3$, there is formed a sol of AgJ, on which the dyestuff is adsorbed, and the luminescence at once sharply diminishes. The dyestuff adsorption is controlled by the measurements of the adsorption spectrum of the dyestuff. When the entire dyestuff is adsorbed on the sol, then its luminescence completely disappears. In the case of an acid dyestuff- fluorescein, this takes place in the presence in the solution of excess silver ions with a concentration of 10^{-5} M/liter, while in the case of a basic dyestuff- rhodamine B, in the presence of an excess of iodine ions.

Andrushchenko, N. K. and Dankov, P. D.
DE SNELHEID VAN HET EERSTE STADIUM VAN DE OXYDATIE VAN ALUMINIUM ONDER LAGE DRUK BIJ KAMERTEMPERATUUR (Velocity of the Primary Stage of Oxidation of Aluminium under Low Pressures at Room Temperature) tr. by J. H. van Santen. 8p. 10 refs. MTWL: 899. (text in Dutch).
Order from OTS or ETC $1.55 61-17608

Trans. of Akademiya Nauk SSSR. Doklady, 1948, v. 62, p. 353-356.

DESCRIPTORS: *Aluminium, *Oxidation, Velocity, Low pressure research.

Balandin, A. A.
PRESENT-DAY ASPECTS OF THE CATALYSIS PROBLEM AND FUNDAMENTAL PRINCIPLES FOR THE INVESTIGATION OF CATALYSTS. 27p. 66 refs. MTWL: 837.
Order from OTS or ETC $1.85 61-17378

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1955, no. 4, p. 624-638.

DESCRIPTORS: Catalysis, Theory, *Catalysts, *Selection, Electrons.

Beletsky, M. S.
DE STRUCTUUR VAN HET OXYDE DAT ZICH VORMT OP HET OPPERVLAK VAN ALUMINIUM (Structure of the oxide film formed on the surface of aluminium) tr. by J. H. van Santen. 6p. 9 refs. MTWL: 713. (Text in Dutch).
Order from OTS or ETC $1.55 61-17316

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 75, no. 4, p. 551-553.

DESCRIPTORS: *Aluminium, Surfaces, Aluminium compounds, Oxides.

Belyaev, Y. N., Hodakov, A. L., and Sholokhovich, M. L.
EFFECT OF BARIUM TITANATE ON DIELECTRIC PROPERTIES OF LEAD METAPHOSPHATE AND LEAD METABORATE GLASSES. [1961] [7]p. (8 figs. 3 tables omitted).
Order from OTS or SLA $1.10 61-20989

Trans. of Russian language article from unidentified source, n. d.

DESCRIPTORS: *Barium compounds, *Titanates, Dielectric properties, *Lead compounds, *Phosphates, *Borates, *Glass, *Insulating materials, Chemical reactions.

The system $Pb(PO_3)_2$-$BaTiO_3$ is a stable section of the triple reciprocal system Pb, Ba//PO_3, TiO_3; system $Pb(BO_2)_2$-BaTiO is an instable section of the triple reciprocal system Pb, Ba//BO_2, TiO_3. Lead metaphosphate and lead metaborate glasses have higher values of dielectric permeability (E) and with addition of $BaTiO_3$, E increases. For metaborate glasses E decreases with the addition of $BaTiO_3$. Lead metaborate glasses have at high frequencies relatively small tangents of loss angle, not exceeding 50×10^{-4}, little changed by increasing the temperature (to 150°), with better specific resistivity at 300° (2×10^{10} Ω cm). Dependence of specific electroconductivity on temperature is subjected to the exponential law $\sigma = Ae^{-E/T}$. Energy of activation, calculated from the given electroconductivity for metaphosphate glasses, is equal to the energy of activation for common glasses; for metaborate glasses these values are very high and reach 70 Kcal/mol. With addition of $BaTiO_3$ to the glasses the energy of activation for metaphosphate glasses increases, while for metaborate glasses it decreases. The effect of the admixtures on dielectric parameters of glasses depends on the character of the chemical interaction of the admixtures with the components of the glass. (Author)

Böhm, J.
ON ALUMINUM AND IRON HYDROXIDES I. 5 Sep 56, 2p. (figs. omitted) 4 refs.
Order from SLA $1.10 62-10044

Partial trans. of unidentified article, n.p., n.d.

DESCRIPTORS: *Hydroxides, *Aluminum compounds, *Iron compounds, Gels, Chemical analysis.

Boreskov, G. K. and Slin'ko, M. G.
THE CALCULATION OF CATALYTIC PROCESSES IN INDUSTRIAL REACTORS (Raschet Kataliticheskikh Protsessov v Promyshlennykh Reaktorakh). Aug 61 [25]p. 8 refs. RTS 1883.
Order from OTS or SLA $2.60 61-27782

Trans. of Khimicheskaya Promyshlennost' (USSR) 1960, no. 3, p. 193-201.

DESCRIPTORS: Analog computers, Computers, *Industrial equipment, Costs, Control systems, *Catalysts, Classification, Thermodynamics, Electronic equipment, Phase studies, Catalysis, Mathematical computer data, *Reaction kinetics

Problems and examples are introduced to illustrate the field for application of electronic mathematical machines for calculation of contact processes. Electronic machines make it possible to solve the more complex problems associated with the course of catalytic processes.

Boreskov, G. K., Dzis'ko, V. A. and others.
INVLOED VAN DE THERMISCHE BEHANDELING OP DE STRUCTUUR EN OP DE KATALYTISCHE ACTIVITEIT VAN ALUMINIUMOXYDE (Effect of heat on the structure and catalytic activity of alumina). 15p. 4 refs. MTWL: 693. (Text in Dutch).
Order from OTS or ETC $1.85 61-17336

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1952, v. 26, p. 492-499.

DESCRIPTORS: *Aluminum compounds, Oxides, *Catalysis, Heating.

Boreskov, G. K. and Sokolova, T. I.
DE KINETICA VAN DE KATALYTISCHE OXYDATIE VAN ZWAVELDIOXYDE OP IJZEROXYDE (Kinetics of contact oxidation of sulfur dioxide in the presence of ferric oxide), 25p. 19 refs. MTWL: 690. (Text in Dutch).
Order from OTS or ETC $2.- 61-17375

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1944, v. 18, p. 87-101.

DESCRIPTORS: *Oxidation, Catalysis, *Sulfur compounds, *Dioxides, Iron compounds, Oxides.

Boreskov, G. K. and Slin'ko, M. G.
DE KINETICA VAN OMKEERBARE KATALYTISCHE REACTIES IN HET GEBIED VAN INWENDIGE DIFFUSIE (Kinetics of reversible catalytic reactions in the internal diffusion range). 10p. 3 refs. MTWL: 694. (Text in Dutch).
Order from OTS or ETC $1.55 61-17337

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1952, v. 26, p. 235-238.

DESCRIPTORS: Diffusion, *Catalysis, Porous materials, Catalysts.

Boreskov, G. K. and Vasilevich, A. O.
THE MECHANISM OF ISOTOPE EXCHANGE IN MOLECULAR HYDROGEN ON PLATINUM FILMS. 8p. 7 refs. MTWL: 955.
Order from OTS or ETC $1.55 61-17551

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 127, no. 5, p. 1033-1036.

DESCRIPTORS: *Platinum, *Hydrogen, Isotopes, *Exchange reactions, Catalysts, Surfaces.

Bresler, S. E., Sinochkin, Yu. D. and others.
ECHANGEURS D'IONS À BASE DE ZIRCONIUM [Ion-Exchange Resins Based on Zirconium] tr. by Kefeli. [1961] [24]p. 3 refs. CEA Trans. no. R 1421 (text in French).
Order from OTS or SLA $2.60 62-13831

Trans. in French of Radiokhimiya (USSR) 1959, v. 1, no. 5, p. 507-513.

DESCRIPTORS: *Ion exchange resins, *Zirconium, Separation, Radiochemistry.

Les données obtenues sur les propriétés d'échange ionique de certains dépôts amorphes de composés au zirconium montrent que les échangeurs d'ions sur base de zirconium peuvent être utilisés avec succès pour la séparation des ions minéraux. L'existence de groupes acides agissant d'une manière sélective permet d'obtenir un enrichissement sensible au cours de la sorption directe. (Author)

Bruns, B. P.
KATALYSE IN STADIA (Catalysis in stages). 16 p. 25 refs. MTWL: 582. (Text in Dutch).
Order from OTS or ETC $1.85 61-17297

Trans. of Zhurnal Fizicheskoĭ Khimii (1947), v. 21, p. 1011-1018.

DESCRIPTORS: *Catalysis, Adsorption, Theory, Chemical bonds, Surface properties.

Chukhanov, Z. F.
DE ONTBRANDING VAN COKESSTOF (Ignition of coke dust). 7p. 2 refs. MTWL: 686. (Text in Dutch).
Order from OTS or ETC $1.55 61-17371

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 81, p. 821-824.

DESCRIPTORS: *Coal, Particles, Combustion, *Ignition.

Chukhanov, Z. F.
VERGELIJKING VOOR DE BEWEGING VAN DE VERBRANDINGSZONE (Equation of the motion of the Zone of combustion). 8p. 2 refs. MTWL: 600. (Text in Dutch).
Order from OTS or ETC $1.55 61-17295

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 77, p. 611-614.

DESCRIPTORS: *Combustion, *Coal, Temperature, Oxygen, Physical chemistry.

Frisman, E. V. and Tsvetkov, V. N.
DYNAMIC BIREFRINGENCE OF LIQUIDS WITH CHAIN MOLECULES. 11p. 10 refs. MTWL: 589.
Order from OTS or ETC $1.55 61-17304

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1951, v. 25, no. 6, p. 682-687.

DESCRIPTORS: Liquids, Viscosity, Solutions, *Hydrocarbons, *Hydrodynamics.

Geichenko, V.
DIRECTION -- LOW TEMPERATURES. 16 Aug 61 [6]p. JPRS: 4882.
Order from OTS or SLA $1.10 61-27956

Trans. of Znannya ta Pratsya (USSR) 1961, no. 3, p. 8-9.

DESCRIPTORS: Temperature, Measurement, Thermometers, Kinetic theory, *Low temperature research, Liquefied gases, Superconductors, Superconductivity, Transition temperature.

It is difficult to say how many marvels we shall encounter on the road to the absolute zero for the attack on low temperatures continues. (Extract)

Gorshkov, V. I. and Panchenkov, G. M.
THE ION EXCHANGE MECHANISM. 8p. 15 refs. MTWL: 845.
Order from OTS or ETC $1.55 61-17353

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 114, no. 3, p. 575-578.

DESCRIPTORS: *Ion exchange, Resins, Chemical equilibrium.

Hein, F. and Hecker, H.
EFFECT OF ALKALINE METALS ON ARYLATED OXIDES. [1961] 5p. 2 refs.
Order from SLA $1.10 62-10415

Trans. of Zeitschrift für Naturforschung (West Germany) 1956, v. 11b, no. 11, p. 677-678.

DESCRIPTORS: *Oxides, *Phosphine oxides, *Alkaline earth metals, Chemical reactions.

Kafarov, V. V.
CALCULATION OF THE PROCESS OF MASS TRANSFER. [1961] 6p. 17 refs. [DSIR LLU] M. 2755.
Order from OTS or SLA $1.10 61-23314

Unedited trans. of #Zhurn[al] Prikl[adnoi] Khimii (USSR) 1958, v. 31 [no. 5] p. 706-[710]. Another trans. is available from CB $7.50.

DESCRIPTORS: Vapors, Turbulent flow, Separation, *Mass transfer, Mathematical analysis, Differential equations.

A generalised equation of mass transfer is obtained for two-phased streams with calculations for the hydrodynamic interaction of the stream phases. On the basis of the ideas of the regime of developed free turbulence-the regime of emulsification - the concept of a dynamic transformation of surface, characteristic for similar two-phased systems, is introduced. On the basis of an analysis of experimental material contained in the literature, the applicability of the case developed to the calculation of diffusion equipment is shown.

Kargin, V. A., Topchiev, A. V. and others.
SEMI-CONDUCTING PROPERTIES OF POLYMERIC MATERIALS. [1961] [11]p. 21 refs. [DSIR NLL] M. 4553.
Order from OTS or SLA $1.60 62-13115

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1960, v. 5, no. 5, p. 507-514.

DESCRIPTORS: *Polymers, Electrical conductance, Dielectrics, *Semiconductors, Chemical properties, Structures, Mathematical analysis, Electrochemistry.

In order to bring out more clearly the problem of producing polymers with semiconductive properties, data on normal semiconductors, are compared with the special structural and chemical features of polymers.

Kasatochkin, V. I.
OVER DE MOLECULAIRE STRUCTUUR EN DE EIGEN SCHAPPEN VAN STEENKOLEN (Molecular structure and properties of hard coal). 9p. 8 refs. MTWL: 689. (Text in Dutch).
Order from OTS or ETC $1.55 61-17374

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 86, p. 759-762.

DESCRIPTORS: *Coal, Molecular structure.

Kiperman, S. L. and Granovskaya, V. Sh.
OVER DE VERANDERING VAN DE ORDE DER REACTIE VAN DE AMMONIAKSYNTHESE. II. ONDERZOEK VAN DE KINETICA DER REACTIE OP EEN IJZERCATALYSATOR VER VAN HET EVENWICHT (Change of the order of reaction of the synthesis of ammonia. II. Kinetics of the reaction on an iron catalyst at a distance from equilibrium). 9p. 10 refs. MTWL: 695 . (Text in Dutch).
Order from OTS or ETC $1.55 61-17338

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1952, v. 26, p. 1615-1618.

DESCRIPTORS: *Ammonia, Synthesis, Chemical reactions, Iron catalysts.

Kornienko, V. P.
THERMAL DECOMPOSITION OF FORMATES OF THE MANGANESE-COPPER RANGE. 16p. 15 refs. MTWL: 929.
Order from OTS or ETC $1.85 61-17579

Trans. of Ukrainskiĭ Khimicheskiĭ Zhurnal (USSR) 1952, v. 18, no. 6, p. 579-588.

DESCRIPTORS: *Formates, Manganese compounds, Copper compounds, *Pyrolysis, Iron compounds, Nickel compounds, Cobalt compounds.

Krch, I. K.
DE ELEKTRISCHE EIGENSCHAPPEN VAN VANADIUMPENTOXYDE (Electrical properties of vanadium pentoxide) tr. by G. B. J. Overbeek. 23p. 22 refs. MTWL: 827. (Text in Dutch).
Order from OTS or ETC $1.85 61-17386

Trans. of Moskovskiĭ Gosudarstvennyĭ Universitet. Uchenye Zapiski (USSR) 1938, v. 1(XIV), no. 1, p. 54-71.

DESCRIPTORS: *Vanadium compounds, *Oxides, Electrical properties.

Krylov, O. V. and Roginskiĭ, S. Z.
A POSSIBLE MECHANISM FOR THE CATALYTIC OXIDATION OF HYDROGEN ON METALS. 8p. 33 refs. MTWL: 836.
Order from OTS or ETC $1.55 61-17377

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1956, no. 2, p. 145-149.

DESCRIPTORS: * Metals, *Hydrogen, Catalysis, *Oxidation, Oxygen, Surfaces, Theory, *Platinum.

Kukharenko, T. A.
ENIGE OPTISCHE EIGENSCHAPPEN VAN HUMINEZUREN UIT MINERALE KOLEN (Some optical properties of humic acids from coal). 8p. 8 refs. MTWL: 692. (Text in Dutch).
Order from OTS or ETC $1.55 61-17335

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 89, p. 133-136.

DESCRIPTORS: *Coal, Acids, Optics.

Lebush, A. G. and Shneerson, A. L.
ABSORPTION OF HYDROGEN SULPHIDE AND ITS MIXTURES WITH CARBONDIOXIDE BY ETHANOL AMIDES. 13 p. 5 refs. MTWL: 596.
Order from OTS or ETC $1.55 61-17291

Trans. of Zhurnal Prikladnoĭ Khimii (USSR) 1950, v. 23, no. 2, p. 145-152.

DESCRIPTORS: *Absorption, *Hydrogen compounds, Sulphides, Carbon dioxide, Mixtures, Ethanols, *Amines.

Leont'ev, E. A. and Luk'yanovich, V. M.
ELECTRON MICROSCOPIC INVESTIGATION OF THE STRUCTURE OF POROUS BODIES BY THE REPLICA METHOD (Elektronno-Mikroskopicheskoe Issledovanie Struktury Poristykh Tel Metodom Replik). Dec 61 [37]p. 24 refs. RTS 1947.
Order from OTS or SLA $3.60 62-13590

Trans. of mono. Metody Issledovaniya Struktury Vysokodispersnykh i Peristykh Tel [Trudy Vtorogo Soveshcheniya 13-18 Iyunya 56] Moscow, 1958, p. 19-36.

DESCRIPTORS: *Porous materials, Microstructure, *Electron microscopy, Silicon compounds, Dioxides, Titanium, Gels, Alumina-silica catalysts, Catalysts, Charcoal.

Several variants of the replica method as applied to the investigation of the structure of porous bodies were developed and their relative value was assessed. Replica preparation methods were quantitatively assessed on the example of non-porous SiO_2 smoke particles. Silica gels, aerosilica gels, titanium gels, and alumino-silicate catalysts consist of more or less spherical particles. In most of the cases investigated the particle dimensions are of the order of magniture of 100 Å. Stereoscopic methods have to be used in order to disclose the structure of these bodies. (Author)

Levin, V. I. and Roginskiĭ, S. Z.
DE KINETICA VAN KATALYTISCHE REACTIES. II. PROCESSEN OP HETEROGENE OPPERVLAKKEN. (Kinetics of contact reactions. II. Processes on heterogeneous surfaces). 29p. 28 refs. MTWL: 581. (Text in Dutch).
Order from OTS or ETC $2.40 61-17296

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1950, no. 2, p. 137-151.

DESCRIPTORS: *Catalysis, Surface properties, Adsorbents.

Lyubov, B. Ya and Fastov, N. S.
DE INVLOED VAN MET DE CONCENTRATIE SAMENHANGENDE SPANNINGEN OP DIFFUSIEPROCESSEN IN VASTE OPLOSSINGEN. (Vlyanie kontsentratsionnykh napryazheniĭ na protsessy diffuziĭ v tverdykh rastvorakh) (Effect of concentration stresses on diffusion processes in solid solutions) tr. by J. H. van Santen. 9p. (foreign text included) 5 refs. MTWL: 708. (Text in Dutch).
Order from OTS or ETC $1.55 61-17331

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 84, no. 5, p. 939-941.

DESCRIPTORS: *Solids, Solutions, *Diffusion, Stresses

Lyudkovskaya, M. A. and Leĭbush, A. G.
SOLUBILITY OF CARBON DIOXYDE IN SOLUTIONS OF CARBON DIOXIDE IN SOLUTIONS OF ETHANOL AMINE UNDER PRESSURE. 15p. 6 refs. MTWL-595.
Order from OTS or ETC $1.85 61-17290

Trans. of Zhurnal Prikladnoĭ Khimii (USSR) 1949, v. 22, no. 6, p. 558-567.

DESCRIPTORS: *Carbon dioxide, Ethanols, *Amines, *Solubility, Pressure.

Mori, M. and Tanaka, I.
METHODE VOOR HET ELIMINEREN VAN CHLOOR UIT VERDUNDE PEKEL BIJ ELECTROLYSE VAN KEUKENZOUTOPLOSSING (Method for the Eliminating of Chlorine from Diluted Pickle by Electrolysis of Sodium Chloride in Solution) tr. by A. Schouten. 7p. MTWL: 880. (text in Dutch).
Order from OTS or ETC $1.55 61-17626

Trans. of Japanese Patent Application 1955, no. 16522, by Osaka Soda. filed 1956, no. 10923.

DESCRIPTORS: Sodium compounds, *Chlorides, Chlorine, Elimination reactions, *Electrolysis, Solutions.

Oganov, K. A.
THE POSSIBILITY OF CREATING A TRAVELLING COMBUSTION FRONT IN A POROUS MEDIUM. 10p. 3 refs. MTWL: 854.
Order from OTS or ETC $1.55 61-17347

Trans. of Neftyanoe Khozuaĭstvo (USSR) 1955, v. 33, no. 7, p. 43-46.

DESCRIPTORS: Combustion, *Flame propagation, Mineral oils, Porous medium.

Paramonova, V. I. and Bartenev, S. A.
APPLICATION DE L'ÉCHANGE D'IONS A L'ÉTUDE DE L'ÉTAT DE SUBSTANCES EN SOLUTION. III. ÉTUDE DES FORMES DU NIOBIUM DANS DES SOLUTIONS D'ACIDES SULFURIQUE ET PERCHLORIQUE [Ion Exchange Applied to Studying the States of Dissolved Substances. III. Study of the Existing Forms of Niobium in the Sulfuric and Hydrochloric Acid Solutions] tr. by Mlle. Dolin. 31 May 61 [27]p. 10 refs. CEA Trans. no. R 1336 (text in French).
Order from OTS or SLA $2.60 62-13800

Trans. in French of Zh[urnal] Neorg[anicheskoi] Khim[ii] (USSR) 1958, v. 3, no. 1, p. 74-81.

DESCRIPTORS: *Ion exchange, Exchange reactions, *Niobium, *Sulfuric acid, *Hydrochloric acid, Solutions, Microanalysis.

Piontelli, Roberto, Polia, Guido, and Rivolta, Bruna.
ELECTRODE BEHAVIOR OF TIN SINGLE-CRYSTALS. [1961] 11p. 4 refs.
Order from SLA $1.60 62-10352

Trans. of Accademia Nazionale dei Lincei. Classe di Scienze Fiziche, Matematiche e Naturali. Rendiconti (Italy) 1959, ser. 8, v. 26, no. 4, p. 431-434.

DESCRIPTORS: *Single crystals, Metallic crystals, *Tin, *Electrodes, Purification, Electrochemistr X-ray diffraction analysis.

Piontelli, Roberto and Bicelli, Luisa Peraldo.
HYDROGEN OVERVOLTAGE ON TIN SINGLE-CRYSTALS. [1961] 9p. 18 refs.
Order from SLA $1.10 62-10351

Trans. of [Accademia Nazionale dei Lincei]. Classe di Scienze Fiziche, Mathematiche e Naturali. Rendiconti (Italy) 1959, ser. 8, v. 27, no. 5 [p. 162-167].

DESCRIPTORS: *Single crystals, Metallic crystals, Electrodes, *Tin, Ion exchange, Reaction kinetics, Electrochemistry, *Hydrogen.

Plaksin, I. N. and Zaitseva, S. P.
THE INFLUENCE OF OXYGEN, NITROGEN AND HYDROGEN ON THE ADSORPTION OF ETHYL XANTHATE BY GOLD, SILVER, COPPER AND THEIR ALLOYS (Vliyanie Kisloroda, Azota i Vodoroda na Adsorbtsiyu Etilovogo Ksantogenata Zolotom, Serebrom, Med'yu i Ikh Splavami). Oct 61 [61]p. 6 refs. RTS 1932.
Order from OTS or SLA $1.10 61-28671

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 4, p. 727-730.

DESCRIPTORS: *Oxygen, *Nitrogen, *Hydrogen, *Adsorption, Ethyl radicals, Xanthates, Gold, Silver, Copper, *Metals, *Gases, Metallurgy, *Alloys.

An increasing oxygen content in the solution in all cases led to an increase in the density of the adsorption layer of xanthate. Irrespective of the quantity of xanthate adsorbed by the surface of the metal or alloy, an increase in the oxygen content of the solution gave rise to a further increase in the density of the layer on all the plates, while on the surface of silver and copper up to 20 and more mono-molecular layers are formed. The preliminary action of nitrogen and molecular hydrogen at the room temperature exhibited no influence on the adsorption capacity of gold, silver, copper and their alloys. The strength of the xanthate layer adhering to the surface increased with increasing oxygen content in the solution. The results show that oxygen is an active factor influencing the adsorption of flotation reagents-collectors. On the one hand it offers the possibility to obtain the necessary density of adsorption layer with less concentration of collector and this makes possible a reduction in the expenditure of reagents; on the other hand it has a varying action on the wettability (i.e., it may be a controller in the flotation process)

Pleskov, Yu. V.
INJECTION AND EXTRACTION OF MINORITY CURRENT CARRIERS ON THE SURFACE OF GERMANIUM ELECTRODE AS A RESULT OF ELECTROCHEMICAL PROCESSES [Inzhektsiya i Ekstraktsiya Neosnovnykh Nositelei toka na Poverkhnosti Germanievogo Elektroda v Resul'tate Elektrokhimicheskikh Protsessov]. [1959] 5p. MDF P-135.
Order from OTS $0.50 62-11506

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1959, v. 126, no. 1, p. 111-114.

DESCRIPTORS: *Semiconductors, *Germanium, Electrodes, Surfaces, *Electrochemistry, Reduction, Chemical reactions.

The influence of hole injection in a germanium electrode was detected during a reduction process thereon. The influence of injection on the indicator process decreases sharply if hydrogen liberation starts at the same time as the ferricyanide reduction on the germanium electrode. As the rate of H_2 liberation increased, the influence of the injection decreased: this phenomenon is reversible if the H_2 liberation rate and time is small. Apparently the hydrogen being liberated at the germanium cathode decreases the minority current carrier lifetime by being introduced into the semiconductor crystal lattice. A surface layer with a raised recombination rate occurs on the polarization side because of the introduction of the hydrogen and any change in the hole concentration because of injection or extraction is cancelled because of recombination (generation, respectively) in this layer. The hydrogen being introduced into the germanium is rapidly removed from the crystal lattice if the H_2 liberation rate and time are insignificant. The depth of hydrogen penetration into the germanium and the energy of the Ge-H bond are small in this case.

Ross, Erich and Moser, Erich.
THE TEMPERATURE-DEPENDENCE OF THE INITIAL PERMEABILITY IN HIGHLY PERMEABLE MANGANESE-ZINC-FERRITES. [1961] 8p. (footnotes 9 figs. omitted).
Order from SLA $1.10 62-10325

Trans. of Zeitschrift f[ür] Angew[andte] (West Germany) 1961, v. 13, no. 5, p. 247-250.

DESCRIPTORS: *Manganese compounds, *Spinels, *Ferrites, Permeability, Temperature, Manufacturing methods, Minerals, Zinc.

In highly permeable manganese-zinc ferrites we find frequently, in addition to the maximum of the initial permeability, close to the Curie-temperature, secondary maximum for reasons which are still unknown. These maxima move with increasing zinc- or iron content away from the Curie-temperature towards lower temperatures, turn around at about -80°C, and combine finally again with the Curie maximum. In the system $MnO-ZnO-Fe_2O_3$ the curves of equal temperature position of the secondary maximum can be represented in a large region by straight lines, but in contrast to the lines of equal Curie-temperature, they are neither equidistant nor parallel. Due to the interaction of the various maxima, we can obtain in the investigated region at room temperature initial permeabilities of about 2,000 to over 10,000. (Author)

Rozentsveĭg, S. A., and Kabanov, B. N.
DE PASSIVERING VAN IJZER EN DE KATHODISCHE REDUCTIE VAN HET HYDRAAT VAN FERRO-OXYDE (Passivation of iron and cathodic reduction of ferrous hydroxide). 9p. 2 refs. MTWL: 687.(Text in Dutch).
Order from OTS or ETC $1.55 61-17372

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1948, v. 22, p. 1214-1218.

DESCRIPTORS: Iron alloys, Iron compounds, Hydroxides, *Reduction, *Cathodes.

Sharov, V. S.
THE ACTION OF HYDROPHOBIC AND GEL-FORMING SUBSTANCES ON CLAYS. 17p. MTWL: 738.
Order from OTS or ETC $1.85 61-17283

Trans. of Groznenskiĭ Neftyanik (USSR) 1936, v. 6, no. 3, p. 10-15.

DESCRIPTORS: *Colloids, gels, *Clays, Hydrates.

Shatenshteĭn, A. I.
THE PRINCIPLES OF HYDROGEN ISOTOPE EXCHANGE IN SOLUTION. 73p. 122 refs. MTWL: 934.
Order from OTS or ETC $3.25 61-17574

Trans. of Uspekhi Khimii (USSR) 1959, v. 28, no. 1, p. 3-32.

DESCRIPTORS: *Hydrogen, *Isotopes, Solutions, Exchange reactions, Chemical reactions.

Skopintsev, B. A.
STUDY OF THE REDOX POTENTIAL IN THE WATERS IN THE BLACK SEA. [1961] [19]p. 31 refs.
Order from OTS or SLA $1.60 62-13088

Trans. of Gidrokhimicheskie Materialy (USSR) [1958] v. 27, p. 21-36.

DESCRIPTORS: *Sea water, Black Sea, Water, *Oxidation-reduction reactions, Potential theory.

A study of the distribution of the oxidation-reduction (redox) potential in the depths of the waters of the open portion of the Black Sea, using the electrometric method and, in part, the colorimetric method (with methylene blue), showed three zones with characteristic redox potential values. The upper zone, roughly the layer between 0 and 100 meters, has positive and rather stable values of the redox potential, from +0.460 v to +0.300 v; the highest values are characteristic of the upper 50 meters, where the content of dissolved oxygen is 130 to 80% of complete saturation; the lowest values for the potential are found in the lower portion of the zone, where the 0_2 content is 25 to 3% of complete saturation. The lower zone, roughly from 300 to 2000 meters, has rather stable negative values of the redox potential, from -0.100 to -0.200 v; here the hydrogen sulfide content rises from 1.0 to 7.7 ml/liter at the bottom. The observed values of the redox potential agree rather well with the calculated values derived from the equilibrium conditions of a hydrogen sulfide -- sulfur system. The middle, or intermediate, zone, with its boundaries roughly at 125 to 150 and 250 to 300 meters, is characterized by unstable values of the redox potential, with a sharp transition from positive to negative values. The decrease in the size of the redox potential in this zone is about 0.4 v. This zone is characterized by a minimum dissolved oxygen content, down to complete disappearance in the lower portion of the zone, and by the presence of hydrogen sulfide throughout the entire zone. (Author)

Tal'rose, V. L. and Lyubimova, A. K.
PROCESSUS SECONDAIRES SE PRODUISANT DANS LA SOURCE D'IONS D'UN SPECTROMÈTRE DE MASSE [Vtorichnye Protessy v Ionnom Istochnike Mass-Spektrometra] [Secondary Processes in the Ion Source of a Mass Spectrometer] tr. by Lichkine. 10 Oct 61 [11]p. 6 refs. CEA Trans. no. R 1409 (text in French).
Order from OTS or SLA $1.60 62-13823

Trans. in French of Akad[emiya] Nauk SSSR. Dok-[lady] 1952, v. 86 [no. 5] p. 909-[912].
A trans. in English is available from ATS as RJ-440.

DESCRIPTORS: *Ion sources, *Mass spectrometers, Methanes, Radioactive isotopes, Ionization, Molecular structure, Ethylenes, Hydrocarbons.

Tatievskaya, E. P., Chufarov, G. J. and Antonov, V. K.
DE REDUCTIESNELHEID VAN IJZEROXYDEN (O skorostyax vosstanovleniya okislov zheleza) (The rates of reduction of iron oxides) tr. by J. H. van Santen. 20p. (foreign text included). 14 refs. MTWL: 704. (Text in Dutch).
Order from OTS or ETC $1.85 61-17327

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1950, v. 24, no. 4, p. 385-393.

DESCRIPTORS: *Iron compounds, Oxides, *Reduction.

Tretyakov, U. D.
ISOTHERMAL SOLUBILITY DIAGRAM OF THE QUARTERNARY SYSTEM $MnSO_4 \cdot (NH_4)_2SO_4$-$MgSO_4$-$(NH_4)_2SO_4$-$FeSO_4(NH_4)_2SO_4$-$H_2O$ at 40°C. [1961] 11p. 9 refs.
Order from OTS or SLA $1.60 61-20858

Trans. of #Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1961, v. 6, no. 4, p. 985-993.

DESCRIPTORS: *Manganese compounds, *Ammonium radicals, *Magnesium compounds, *Iron compounds, *Sulfates, *Water, Phase studies, Chemical equilibrium, Thermodynamics, Solubility, Liquids, Solids, Thermochemistry.

Phase equilibria show that the system may be considered ideal in all ranges of concentrations of salt components. Exact analytical expressions were developed for equilibria relationships between the solid and liquid phases.

Tsukervanik, I. P.
ALKYLATION OF AROMATIC COMPOUNDS IN THE PRESENCE OF PHOSPHORIC ACID. I. CONDENSATION OF ALCOHOLS WITH AROMATIC HYDROCARBONS AND WITH HALOGEN DERIVATIVES. [1961] 6p. 14 refs.
Order from OTS or SLA $1.10 61-20142

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 699-703.

DESCRIPTORS: *Condensation reactions, *Alcohols, *Hydrocarbons, *Halogens, Phosphoric acids, Alkyl radicals, Chemical reactions, Reagents.

It was established that phosphoric acid can be used for alkylation of aromatic hydrocarbons and aromatic halogen derivatives with alcohols. Under optimal reaction conditions yields of up to 80-90 per cent theor. of monoalkyl derivatives are obtained. In no case does resinification or formation of marked amounts of polyalkyl derivatives take place. Dialkylbenzenes formed in these reactions are always substituted in the para position. Their ortho-isomers are formed in insignificant amounts. The radicals of the branched chain alcohols are isomerized to tertiary radicals in the course of the condensation. (Author)

Varshavskiĭ, Ya. M. and Vaĭsberg, S. E.
DEUTERIUM DISTRIBUTION IN HYDROGEN ISOTOPE EXCHANGE Tr. by E. R. Hope. 15p. 17 refs. MTWL: 825.
Order from OTS or ETC $1.85 61-17384

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1955, v. 29, no. 3, p. 523-532.

DESCRIPTORS: *Hydrogen, Isotopes, *Deuterium, *Exchange reactions, Molecules, Vibration, Theory.

Wasserberg, V. E., Balandin, A. A., and Davydova, I. R.
FORMATION OF INTERMEDIATE RADICAL-LIKE SURFACE FORMS IN HETEROGENEOUS CATALYSIS, tr. by I. Gawronska. 29 Mar 61, 6p. 17 refs. Courtaulds Misc. Lit. 3290; [DSIR NLL] M. 3245.
Order from OTS or SLA $1.10 62-15245

Trans. of Akad[emiya] Nauk SSR. Doklady, 1961, v. 136, no. 2, p. 377-380.

DESCRIPTORS: *Magnesium compounds, *Sulfates, *Catalysts, Catalysis, *Free radicals, Production, Hydrogen, Hydrogenation, Dehydrogenation.

Wiberg, Egor and Müller-Schiedmayer, Gunther.
ON HYDROGENATION OF PHOSPHOROUS HALIDES WITH METAL HYDRIDES: ON THE PROBLEM OF THE EXISTENCE OF A PHOSPHINEOXIDE PH_3O. [1961] 18p. 15 refs.
Order from SLA $1.60 61-20187

Trans. of Zeit[schrift für] Anorg[anische] Chemie (East Germany) 1961, v. 308, no. 1/6, p. 352-368.

DESCRIPTORS: Hydrogenation, *Phosphorus compounds, Halides, Metals, *Hydrides, *Phosphine oxides, Decomposition, Chemical analysis, Oxides

Yakushin, F. S. and Shatenshtein, A. I.
EFFET ISOTOPIQUE CINÉTIQUE AU COURS DES RÉACTIONS D'ECHANGE DU DEUTERIUM ET DU TRITIUM DANS L'AMMONIAQUE LIQUIDE (Kineticheskii Izotopnyi i Effekt pri Deitero i Tritii-Obmene) [The Isotopic Kinetic Effect During the Exchange Reactions of Deuterium and Tritium in Liquid Ammonia] tr. by Mme. Masour. 24 Sep 61 [18]p. 35 refs. CEA Trans. no. R 1403.
Order from OTS or SLA $1.60 62-13818

Trans. in French of Kinetik [a i] Katal[iz] (USSR) 1960, v. 1, no. 4, p. 489-495.

DESCRIPTORS: Exchange reactions, *Deterium, *Tritium, Radioactive isotopes, *Ammonia, *Liquified gases, Kinetic theory.

Il a été procédé aux mesures de la cinétique de l'échange isotopique du deutérium et du tritium dans le fluorène et la méthyl - β - naphtyl - cétone avec l'ammoniaque liquide à 25°. Il a été montré que dans les deux cas le deutérium s'échange contre le protium deux fois plus rapidement que le tritium. Les résultats obtenus ont été confrontés avec les données recueillies sur l'effet isotopique cinétique (E. I. C.) observé au cours des réactions de métallisation de substances organiques par des combinaisons organo-alcalines, les lois auxquelles sont soumises les deux réactions étant similaires. La présence d'un effet isotopique cinétique positif pendant les réactions décrites ainsi que les informations d'autre nature sur leurs particularités s'accordent parfaitement avec l'hypothèse selon laquelle la vitesse de ces réactions serait contrôlée par le stade de rupture (ou d'étirement) de la liaison CH - dans la molécule lorsque l'atome d'hydrogène de la liaison CH - est attaqué par la base au cours de la phase transitoire. (Author)

Zadumkin, S. N.
THEORIE DER OPPERVLAKTESPANNING VAN METALEN (Theory of the surface tension of metals) tr. by K. Compaan. 7p. 10 refs. MTWL: 724. (text in Dutch).
Order from OTS or ETC $1.55 61-17309

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1953, v. 27, p. 502-504.

DESCRIPTORS: *Metals, *Surface tension, Theory.

EARTH SCIENCES

BULLETIN (IZVESTIYA) ACADEMY OF SCIENCES USSR, GEOPHYSICS SERIES, 1961, NOS. 1-7, P. 1-724. May-Oct 61, 7 nos.
Order from AGU $5.00, $25.00/year

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1961, nos. 1-7, p. 3-1096.

DESCRIPTORS: *Geophysics, Physics, Periodicals.

HYDROLOGY MONTHLY, 1959, NO. 5: SELECTED TRANSLATIONS. 14 Nov 61 [24]p. JPRS: 11096.
Order from OTS or SLA $2.60 62-13556

Trans. of Shui Wen Yuek K'an (Chinese People's Republic) 1959, no. 5, p. 22, 24-25, 27-29, 35-37, 43.

DESCRIPTORS: *Hydrology, Periodicals, Levees, Failure (Mechanics), Floods, Mathematical prediction, Water. Consumption, Mountains, Precipitation,

Measurement, Gages, Semiconductors, Thermometers, Design.

Contents:
A method of flood calculation after levee collapse
A method of surveying amount of paddy water consumption, by Hu Chih-p'ing
Rain gauge for high mountains, by Cheng Tse-min
A semi-conductor thermometer
Experience notes
Suggestion on simplifying computation for flow reporting
Wind protector for evaporation disc and counting equipment
Revised computing table for flow velocity.

METEOROLOGY AND HYDROLOGY, 1961, NO. 8: SELECTED ARTICLES. 13 Dec 61 [92]p. 19 refs. JPRS: 11504.
Order from OTS or SLA $8.60 62-15237

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 8, p. 11-19, 26-32, 38-41, 52-55, 57-60.

DESCRIPTORS: *Meteorology, *Hydrology, Stratosphere, Transformations, Hydroelectric power systems, Humidity, Moisture, Oceanography, Jet streams (Meteorology).

Contents:
The field of the geopotential in the stratosphere, by Kh. P. Pogosyan
Meridional transformations of the temperature and pressure field of the atmosphere and the evolution of the jet stream, by M. V. Shabel'nikova
Precalculation of the course of the levels of the Volga river below the Stalingrad hydroelectric power station by the electromodeling method, by A. G. Levin and A. P. Zhidikov
Automatic device for measuring and recording the coefficient of heat and moisture, by Yu. L. Rozenshtok
Literature on meteorology, hydrology, and oceanography during 1960. II. Articles in journals and collections.

SOVIET DETECTION METHODS FOR UNDERGROUND EXPLOSIONS: COLLECTION OF TECHNICAL PAPERS. Dec 61.
Order from CB $22.50

Trans. of unidentified Russian mono. composed of research carried out at the A. Yu. Shmidt Institute of Earth Physics, Acad. of Sciences USSR, n.d.

DESCRIPTORS: *Underground explosions, Blast, Detection, *Nuclear explosions, Earthquakes, Seismic waves, TNT.

Betin, V. V., Zhadrinskii, S. V., and Uralov, N. S.
A METHOD OF INSTRUMENTAL AERIAL OBSERVATIONS ON LAND ICE IN THE SEA (Spasob Instrumental'nykh Avianablyudenii nad Materikovymi L'dami v More) tr. by M. Slessers. 1961 [17]p. HO Trans-122.
Order from OTS or SLA $1.60 61-28006

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 5, p. 51-54.

DESCRIPTORS: Ice, *Glaciers, *Aerial reconnaissance, Measurement.

The measurement of the size and height of icebergs, and also huge hummocks and stamukhi, by means of an aerial perspective angle measuring instrument is discussed and the degree of accuracy in the measurements is determined. Also the advantages of the method in aerial reconnaissance flights is pointed out. (Translator)

Chu, Shu-p'ing.
ON SOME PHYSICAL AND CHEMICAL PROPERTIES OF THE WATER IN THE NORTHERN PART OF LAKE T'AIHU. 30 Nov 61 [25]p. 2 refs. JPRS: 11358.
Order from OTS or SLA $2.60 62-15229

Trans. of Hai Yang Yu Hu Chao (Chinese People's Republic) 1959, v. 2, no. 3, p. 146-159.

DESCRIPTORS: *Lakes, *Water, Physical properties, Chemical properties.

Fedorov, E[vgenii] P[avlovich].
NUTATION AND FORCED MOTION OF THE EARTH'S POLE, FROM DATA OF LATITUDE OBSERVATIONS. 1962, approx. 270p.
Order from PP $8.00

Trans. of Nutatsiya i Vynuzhdennoe Dvizhenie Polyusov Zemli po Dannym Shirotnykh Nablyudenii, Kiev, 1958, 142p.

DESCRIPTORS: *Earth, Motion, Rotation, Elasticity, Deformation, Inertia, Astronomical data, Corrections, Differential equations, Integration, Numerical analysis, Geophysics, Diurnal variations.

Fok, V. A.
HET VELD VAN EEN VERTICALE EN VAN EEN HORIZONTALE DIPOOL, DIE ZICH BOVEN HET AARDOPPERVLAK BEVINDT (The field of a vertical and horizontal dipole raised above the earth's surface) tr. by J. H. van Santen. 25p. 3 refs. MTWL: 711. (Text in Dutch).
Order from OTS or ETC $1.95 61-17314

Trans. of Zhurnal Eksperimental'noĭ i Teoreticheskoĭ Fiziki (USSR). 1949, v. 19, no. 10, p. 916-929.

DESCRIPTORS: Earth, Surfaces, *Dipole antennas, Electromagnetic fields, Theory.

Galyavich, A. Sh., Dvorkin, I. L. and others.
EVALUATION OF THE WATER-OIL BEARING CAPACITY OF FORMATIONS IN BORE HOLES BY NEUTRON-GAMMA LOGGING. 9p. 4 refs. MTWL: 946
Order from OTS or ETC $1.55 61-17560

Trans. of Neftyanoe Khozyaĭstvo, (USSR) 1955, no. 11, p. 59-62.

DESCRIPTORS: *Mineral oils, Production, Hydrology, Boundery layer, Water, *Well logging, *Neutron counters, *Gamma counters.

Vinogradov, A. P.
CHEMICAL EVOLUTION OF THE EARTH. Lecture no. 1 dedicated to V. I. Vernadskii, delivered 30 Mar 59. [1961] [52]p. (10 tables, 2 photos. omitted) 1 ref.
Order from OTS or SLA $5.60 62-13487

Trans. of unidentified mono. (lecture) pub. by Academy of Sciences, Moscow, 1959.

Descriptors: *Earth, Sun, Planets, *Chemical analysis, Zone melting, Gravity, Meteorites, Nebulae, Gases, Water, Separation, Thermodynamics, Atoms, Radioactivity,

Climatology and Meteorology

Sapozhnikov, V. I. and Grechko, E. S. G.
FORECAST OF THE WATER INFLOW INTO THE RESERVOIR OF THE VOLGA HYDROELECTRIC POWER PLANT IMENI LENIN, FROM DISCHARGE RELATIONS AND INTERMEDIATE INFLOW (Prognoz Pritoka v Vodokhranilishche Volzhskoi GES im. V. I. Lenina po Sootvetstvennym Raskhodam i Promezhutochnomu Pritoku). 1961, 7p. 3 refs. PL-470 Agr.
Order from OTS $0.50 60-51008

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 1, p. 40-44.

DESCRIPTORS: *Hydroelectric power systems, Power plants, *Water supplies, Inland waterways, Floods, Drainage, Mathematical prediction

We examine primarily how the data on the water discharges at the upper section are used and how the tendency in the variation of the intermediate inflow is taken into account for the purpose of short-range forecasts of the inflow in the reservoir of the Volga Hydroelectric Power Plant imeni Lenin. Moreover, we consider the simplest method of forecasting the runoff at the inflow sections from the actual data of the water discharges on the river network. (Author)

Vlasova, S. A. and Terterov, A. A.
EXPERIENCE IN THE HYDROMETEOROLOGICAL STUDY OF TORRENTIAL RIVERS AND THEIR DRAINAGE BASIN (Opyt Gidrometeorologicheskogo Izucheniya Selenosnykh Basseinov). 1961, 4p. PL-480 Agr.
Order from OTS $0.50 60-51024

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 1, p. 47-49.

DESCRIPTORS: *Inland waterways, *Hydrology, *Meteorology, Drainage, Meteorological data, Precipitation, Fluid flow, Water waves

Zamorski, A. D.
VISUAL OBSERVATIONS OF ARTIFICIAL SATELLITE tr. by E. R. Hope. 7p. MTWL: 921.
Order from OTS or ETC $1.55 61-17587

Trans. of Priroda (USSR) 1958, v. 11, p. 85-87.

DESCRIPTORS: *Satellites, Earth, Astronomical Observations, Meteorology.

Zavarina, M. V.
PHASE STRUCTURE OF CLOUDS AND AIRCRAFT ICING. 12 Sep 60, 9p. (12 tables omitted). [DSIR NLL] M. 2716.
Order from OTS or SLA $1.10 61-23297

Trans. of Glav[naya] Geof[izicheskaya] Obs[ervatoriya] Leningrad. T[rudy] (USSR) 1958, no. 82 [144] [p. 26-35].

DESCRIPTORS: *Clouds, *Aircraft, Ice prevention, *Ice, Thickness, Phase studies, Freezing, Structures, Mathematical analysis.

The main purpose of the study was that of revealing the features of the phase structure of various types of cloud on the basis of extensive data, and of establishing a link between them and aircraft icing. Among other factors under consideration were the vertical development and intensity of the icing zone, the connection between air temperature and the type of ice-accretion on the aircraft and the relationship between aircraft icing and bumpiness in cloud. (Author)

Zimont, I. L.
A SPRINKLING-RUNOFF UNIT (Dozhdeval'no-stokovaya Ustanovka). 1961, 4p. 1 ref. PL-480 Agr.
Order from OTS $0.50 60-51029

Trans. of Meteorológiya i Gidrologiya (USSR) 1959, no. 1, p. 54-57.

DESCRIPTORS: *Meteorological instruments, *Sprinklers, *Artificial precipitation, Precipitation, Soils; Moisture, Absorption, Drainage, Erosion, Hydrology

The unit permits the analysis of runnoff, seepage, soil erosion and other phenomena associated with rainfall and thus the reproduction of precipitation on models of various types of natural and regulated basins.

Geodesy

GEODESY AND CARTOGRAPHY, 1960, NOS. 1-12, P. 1-582. [1961] 6 nos.
Order from AGU $7.50, $20.00/year

Trans. of Geodeziya i Kartografiya (USSR) 1960, nos. 1-12.

DESCRIPTORS: *Geodesics, *Mapping, Periodicals.

Zakharov, P. B.
TESTS FOR DETERMINING RESOLVING POWER FROM AERIAL PHOTOGRAPHS. 20 Sep 61 [29]p. 11 refs. MCL-1236/1+2. AD-264 623.
Order from OTS or SLA $2.60 61-28815

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka (USSR) 1960, no. 6, p. 121-132.

DESCRIPTORS: *Aerial photography *Aerial photographs, Resolution, Test methods.

Differences in the resolving power of the aerial negatives employed("panchromatic type 10", "spectrozonal SN-2" and "color TsN") determined by a resolving meter according to the magnitudes of resolving and accentuating power obtained from aerial photographs were not detected. Juxtaposition of accentuating and resolving power according to the sizes of resolving details (strips) shows that under identical conditions of photography resolution of photographs of individual strips (accentuating power) is basically twice as great. Accentuating power obtained by photographing strips varying in contrast, placed at an angle of 45° to the line of flight, is basically twice as high for contrast k= 0.7 (sand-grass), than for strips with contrast k= 0.2 (ground-grass). Generalization of the quality of all of the target images obtained from various altitudes shows that: (1) targets placed in the direction of flight are reproduced with greater sharpness; and (2) decreases in resolving power depending on the position of targets on negatives (from the center to the border) is hardly noticeable. (Author)

Geology

TEKTONISCHE KAART, DE, VAN DE USSR EN AANGRENZENDE LANDEN. SCHAAL 1:5.000.000. VERKLAREND OVERZICHT (Tectonical map of the USSR and neighbouring countries. Explanatory Survey) by N. S. Shatskiĭ and A. A. Bogdanov.112p. MTWL: 831. (Text in Dutch).
Order from OTS or ETC $2.80. 61-17379

Trans. of mono. Tektonicheskaya Karta SSSR. Masshtab 1: 5.000.000, 1956.

DESCRIPTORS: *Geology, Mapping, *USSR.

Alikhova, T. N., ed.
THE ORDOVICIAN SYSTEM (Ordovikskaya Sistema). Apr 61 [57]p. RTS 1640.
Order from OTS or SLA $5.60 61-19699

Trans. of mono. Geologicheskoe Stroenie SSSR (Geological Structure of the USSR) Moscow, 1958, p. 187-211.

DESCRIPTORS: *Geology, Geological survey, Deposits, Paleoecology.

Contents:
Distribution and knowledge, by T. N. Alikhova
Review of the Ordovician of the U. S. S. R. by regions:
Russian platform, by T. N. Alikhova
Novaya Zemlya, by V. I. Bondarev
Vaigach and Pai-Khoi, by A. M. Ivanova
The Urals, by K. A. L'vov and K. P. Evseev
Central Asia, by E. I. Zubtsov
Kazakhstan, by L. I. Borovikov
The Altae-Sayan region, by T. N. Alikhova,
Siberian platform, by O. I. Nikiforova
Taimyr peninsula, by M. N. Zlobin
Severnaya Zemlya and the New Siberian Islands, by M. S. Zhizhina
The North-East, by A. A. Nikolaev
Comparison of the most important sections of the Ordovician deposits of the U. S. S. R, by T. N. Alikhova
Mineral resources, by T. N. Alikhova
Fundamental problems of the further study of the Ordovician deposits of the U. S. S. R, by T. N. Alikhova

Ammosov, I. I. and Musyal, S. A.
HER REFLECTIEVERMOGEN ALS EEN VAN DE HOOFDEIGENSCHAPPEN VAN MINERALE KOLEN (Reflecting power as one of the main properties of fossil coals). 7p. 4 refs. MTWL: 681. (Text in Dutch).
Order from OTS or ETC $1.55 61-17366

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 84, p. 1223-1226.

DESCRIPTORS: *Coal, *Reflection, Structure, Classification.

Bakirov, A. A.
DE BELANGRIJKSTE RESULTATEN EN DE VOORUITZICHTEN VAN DE ONTWIKKELING VAN DE NATIONALE GEOLOGIE OP HET GEBIED VAN OPSPOREN EN VERKENNEN VAN OLIE- EN GASVELDEN (Most Important Results and Prospects of the Development of the National Geology on the Field of Exploration and Scouting the Oil- and Gas Districts).. 46p. MTWL: 906. (Text in Dutch).
Order from OTS or ETC $2.77 61-17598

Trans. of Sovetskaya Geologiya (USSR) 1957, no. 60, p. 118-142.

DESCRIPTORS: *Minerals oils, *Gases, Geology, Exploration, *SSSR.

Barsukov, V. L.
ON THE GEOCHEMISTRY OF TIN, tr. by T. F. Jeletzky. Paper presented at International Geological Congress (no. 20) Mexico, 14 Sep 60, 29p. 4 refs.
Order from OTS or SLA $2.60 61-15885

Trans. from [Geokhimiya] (USSR) 1957, no. 1.

DESCRIPTORS: *Tin, *Geochemistry, Granite, Chemical analysis, Age, Lattices, Centrifuges, Mica, Ores, Deposits.

Research indicates that the granitic massifs that are not mineralized with the tin do not differ essentially from the "tin bearing" granites either in the age or in the mineralogical composition. The tin penetrates isomorphically into the biotite lattice rather than forms an independent mineral cassiterite scattered along the cleavage planes of the mica. A study of the redistribution of tin in granites during their postmagmatic, hydrothermal alterations indicates that the leading role in the enrichment of hydrothermal solutions in the tin is played by the autometasomatic, postmagmatic processes. Some enrichment of the ore

bearing solutions in the tin also takes place as the result of the magmatic differentiation. The hard, crystallized granite enriched in the tin is the basic source of the tin from which the tin deposits are formed. In this granite the tin is present mainly in the form of an isomorphously bound component in the biotite lattice. During an investigation of a series of tin deposits of the quartz-cassiterite formation the presence of a vertical zonation was established within them.

Beker-Migdisova, E. E.
NEW FOSSIL HOMOPTERA, I. [1961] [14]p. (7 figs. omitted) 10 refs.
Order from OTS or SLA $1.60 61-28173

Trans. of Osnovy Paleontologii. Materialy (USSR) 1958, no. 2, p. 57-67.

DESCRIPTORS: *Paleoecology, Geology, *Insects, Classification

Chu, Hsien-mu.
CLASSIFICATION OF SOIL EROSION IN THE LOESS REGION. 18 Sep 61 [32]p. 7 refs. JPRS: 4981.
Order from OTS or SLA $3.60 61-28578

Trans. of T'u Jang Hsüeh Pao (Chinese People's Republic) 1956, v. 4, no. 2, p. 99-114.

DESCRIPTORS: *Classification, *Soils, *Erosion, China, Drainage, *Water, Water supplies, Clays.

Chudinova, I. I.
THE DEVONIAN THAMNOPORIDAE OF SOUTHERN SIBERIA [Devonskie Tamnoporidy Yuzhnoi Sibiri]. [1961] 243p. (tables figs. omitted).
Order from OTS or SLA $16.00 61-15956

Trans. of [Akademiya Nauk SSSR. Paleontologicheskii Institut. Trudy] 1958, v. 73 [146p.]

DESCRIPTORS: Siberia, *Paleoecology, Geology, *Coral reefs, *Aquatic animals, Marine biology.

This work is based upon the collections that were gathered by E. A. IVANOVA, a senior fellow worker at the Institute, from the Middle-Devonian deposits in the Minusinsk and Tuvinsk basins as well as upon private collections from the Middle Devonian of the Minusinsk basin. Furthermore, the collections of other fellow workers of the Institute and of some geological institutions were placed at my disposal. (Author)

Ciric, M. and Aleksandrovic, D.
A VIEW ON THE GENESIS OF TERRA ROSSA (Jedno Glediste o Genezi Crvenice) tr. by Dusan Glumac. 1961, 12p. 26 refs. PL-480 Agr.
Order from OTS $0.50 60-21677

Trans. of Belgrade U. Poljoprivredni Fakultet. Zbornik Radova. [Review of Research Work] (Yugoslavia) 1959, v. 7, no. 277, p. 1-12.

DESCRIPTORS: *Earth, *Soils, *Calcite, Chemical properties, *Clays, Climatic factors, Rock, Geology.

Observations of the geography of terra rossa in Istria, Dalmatia, Bosnia and Hercegovina caused us to examine the justifiability of the so called residual theory regarding the genesis of terra rossa. Analyses of the insoluble residue of different mesozoic and tertiary limestones showed that the appearance of terra rossa is associated with limestones having the insoluble residue of red color with a relatively narrow molecular $SiO_2:R_2O_3$ ratio (less than 2). They are mainly mesozoic limestones from which terra rossa is formed in all climatic regions, since the process of the limestone's dissolving and accumulation of residue is a universal process independent of the regional climatic characteristics. Inasmuch as the residuum of mesozoic limestones does not possess these properties terra rossa will not appear even in the pronounced Mediterranean regions (e. g.,) Dubrovnik). The chemical properties of the residuum are within the range of characteristics for terra rossa, so that it is not necessary to suppose the need of the process of "rubification" which would turn the residuum into terra rossa. It is a matter of a simple process of limestone dissolution and the liberation of red residual clay which is continually developing from the moment pedogenesis has started on these limestones. These are old soil formations though not relict ones since they are not in disharmony with contemporary climatic conditions. The dynamics of terra rossa are analogous to the dynamics of terra fusca with certain characteristic features in every climatic region. (Author)

Gerasimov, I. P.
SCIENTIFIC PRINCIPLES OF SOIL SYSTEMATICS AND CLASSIFICATION (Nauchnye Osnovy Sistematiki i Klassifikatsii Pochv). 1962, 15p. 14 refs. PL-480 Agr.
Order from OTS $0.50 61-11493

Trans. of Pochvovedenie (USSR) 1954, no. 8, p. 52-64

DESCRIPTORS: *Soils, *Classification, *Geological time, Temperature, Climatic factors.

An attempt is made to describe the present state of the problems of the systematization and classification of USSR soils and to advance a series of propositions, of principles, that require collective consideration. (Author)

Gorshenin, K. P.
CONCERNING THE BASIC PRINCIPLES OF SOIL CLASSIFICATION (Ob Osnovynkh Printsipakh Klassifikatsii Pochv). 1962, 6p. PL-480 Agr.
Order from OTS $0.50 61-11494

Trans. of Pochvovedenie (USSR) 1955, no. 2, p. 73-78

DESCRIPTORS: *Soils, *Classification, *Geological time, Mountains, *Geography, Temperature, Climatic factors.

Ionov, V. A., Balyasnyi, N. D. and others.
A METHOD FOR AERIAL SUREVEYING OF RADIOACTIVE ELEMENTS. 21 Nov 61 [5]p. FTD-TT-61-213
Order from OTS or SLA $1.10 62-15187

Unedited rough draft trans. of #Byulleten' Izobretenii (USSR) 1960, no. 22, p. 25-28 (Russian patent 133538).

DESCRIPTORS: *Rock, *Labeled substances, *Radioactive isotopes, Radium, Thorium, Potassium, Gamma rays, *Aerial reconnaissance, Gamma ray spectra, Scintillation counters, Geology.

Katchenkov, S. M. and Katchenkova, N. S.
METHOD OF SEARCH FOR GERMANIUM. [1961] 3p.
Order from OTS or SLA $1.10 61-19560

Trans. from Izvestiya Vysshikh Uchebnykh Zavedenii. Geologiya i Razvedka (USSR) 1959 [v. 2] no. 3, [p. 87-88].

DESCRIPTORS: *Germanium, Rock, Coal, Spectrographic analysis, Chemical analysis.

Khain, V. E.
SOME BASIC QUESTIONS OF GEOTECTONICS TODAY, tr. by E. R. Hope. Sep 61, 18p. 39 refs.
DSIS T 355 R. AD-266 470.
Order from NRCC NRCC C-3756

Trans. of Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Geol[ogicheskaya] 1957 [v. 22] no. 12, p. 47-60.

DESCRIPTORS: Geology, *Geophysics, *Earth, Radioactive decay, Rotation, Classification, Geological time, *Oceans.

Kotyakhov, F. I.
AN APPROXIMATE METHOD FOR THE EVALUATION OF NATURAL AND ARTIFICIAL FRACTURING OF ROCKS. 14p. MTWL: 938.
Order from OTS or ETC $1.85 61-17570

Trans. of Neftyanoe Khozyaĭstvo (USSR) 1957, no. 3, p. 30-36.

DESCRIPTORS: *Rock, Fracture, *Mineral oils, Production, Hydrology.

Li, Pao-hsing.
HYDROGEOLOGICAL CONDITIONS FOR THE HUA HAI TZU BASIN OF THE WESTERN PART OF CHIU-CH'UAN, KANSU PROVINCE, AND THOUGHTS ON FUTURE HYDROGEOLOGICAL SURVEYS. 19 Dec 61 [11]p. JPRS: 11640.
Order from OTS or SLA $1.60 62-15232

Trans. of Shui Wen Ti Chih Kung Ch'en[g] Ti Chih (Chinese People's Republic) 1959, no. 6, p. 18-22.

DESCRIPTORS: *Hydrology, *Geology, Geological survey, Water, Drainage, Soils.

Lin, Hua-chih.
CONDITIONS OF ENGINEERING GEOLOGY OF MEIHUASHAN TUNNEL, KWEICHOW (Kwei Chow Mei Hua Shan Sui Tao Kung Ch'eng Ti Chih T'iao Chien). 30 Oct 61 [29]p. JPRS: 10854.
Order from OTS or SLA $2.60 62-13362

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 5, p. 10-15.

DESCRIPTORS: *Hydrology, *Geology, Drainage, Underground structures, Design.

The Meihuashan Tunnel is in the Shuiyung section of the Ch'ien (Kweiyang) Tien (Kunming) Highway situated between Weining and Shuichéng Hsien of Kweichow Province approximately 40 kilometers apart in the central region of Yunnan-Kweichow Plateau. The tunnel penetrates the drainage divide between Weining and Shuich'eng in a direction of S 50° W. The summit is 2,550 meters above sea-level and 550-600 meters above the foot-hills. The total length of the tunnel is 4,100 meters and the proposed grade of the roof-shaped slope is three percent. (Author)

Lo, Hsiang-k'ang and Lu, Yao-ju.
EXPERIENCES IN CONDUCTING HYDROGEOLOGICAL CENSUS WORK IN LIMESTONE KARST AREAS [AND] PRELIMINARY INFORMATION ON HYDROGEOLOGICAL AND ENGINEERING GEOLOGICAL CONDITIONS FOR DAM AREAS AT NAN-CHIN PASS IN SAN-HSIA. 17 Oct 61 [30]p. JPRS: 10629.
Order from OTS or SLA $2.60 62-13334

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 5, p. 19-25.

DESCRIPTORS: *Hydrology, *Geology, Geological survey, Dams, Rock, Calcite, China.

Mogilevskii, G. A.
GEOCHEMICAL METHODS FOR OIL AND GAS PROSPECTION. [1961] [3]p.
Order from OTS or SLA $1.10 62-10435

Trans. of Priroda (USSR) 1958 [v. 47] no. 9, p. 107-108.

DESCRIPTORS: Oils, Gases, Petroleum, *Geophysical prospecting, *Geochemistry, Chemistry.

Nazarov, S. N.
FLANK FLOODING OF THE LIMESTONE RESERVOIRS IN THE KHODZHIABAD FIELD. 15p.
MTWL: 933.
Order from OTS or ETC $1.85 61-17575

Trans. of Neftyanoe Khozyaĭstvo (USSR) 1959, no. 4, p. 35-41.

DESCRIPTORS: *Mineral oils, Production, *Geology, SSSR.

Ol'shanski, Ya. I. and Ivanenko, V. V.
MECHANISM OF THE TRANSFER OF SUBSTANCES IN THE FORMATION OF HYDROTHERMAL SULFIDE DEPOSITS [Mekhanizm Perenosa Veshchestv pri Obrazovanii Gidrotermal'nykh Mestorozhdenii Sul'fidov]. [1961] [116]p. (31 figs. 19 tables omitted) 4 refs.
Order from OTS or SLA $9.60 61-15963

Trans. of [Akademiya Nauk SSSR. Institut Geologii Rudnykh Mestorozhdenii, Petrografii, Mineralogii i Geokhimii. Trudy] 1958, no. 16, 76p.

DESCRIPTORS: Solubility, *Sulfides, Solutions, Temperature, Geology, Hydrology, Crystallation.

Experimental investigations were made on the solubility of the principal sulfides in aqueous solutions at different temperatures. It was confirmed that the solubility of sulfides in aqueous solutions is many times higher than was commonly believed by geologists. The value obtained for solubility are large enough so that the possibility of crystallization of sulfides from true aqueous solutions under normal conditions is not absurd.

Radchenko, O. A. and Sheshina, L. S.
GENESIS OF PORPHYRINS IN MINERAL OIL. 9p. 22 refs. MTWL: 848.
Order from OTS or ETC $1.55 61-17356

Trans. of Akademiya Nauk SSSR. Doklady. 1955, v. 105, no, 6, p. 1285-1288.

DESCRIPTORS: Mineral oils, *Porphyrins, Geochemistry.

Serebrennikov, V. S.
SEASONAL CHANGES IN THE URANIUM CONTENT IN UNDERGROUND WATERS. [1961] 5p. (3 illus. 2 tables omitted).
Order from OTS or SLA $1.10 61-23961

Trans. from mono. [Materialy po Geologii Rudnykh Mestorozhdenii, Petrografii, Mineralogii i Geokhimii] (Materials on the Geology Of Ore Deposits, Petrography, Mineralogy and Geochemistry) [Moscow, 1959, 424p.].

DESCRIPTORS: Climatic factors, *Precipitation, *Hydrology, Water, Chemical analysis, Ores, *Uranium, Sources, Rock, Mountains, Mining engineering, Geochemistry, Minerals.

Trofimuk, A. A.
URAL-VOLGA, HET NIEUWE OLIEGEBIED VAN DE USSR. NA-OORLOGSE ONTWIKKELINGEN IN DE OPSPORING VAN OLIE EN GAS, 1946-1957. (Ural-Volga the new oil district of the USSR. Post-war developments in the exploration of oil and gas). 25p. MTWL: 935. (Text in Dutch).
Order from OTS or ETC $1.93 61-17573

DESCRIPTORS: *Mineral oils, Gases, *Exploration, SSSR.

Mineralogy

Moriguchi, Shigeichi, Asaka, Tetsuichi and others.
STATISTICAL STUDIES ON COAL AND ORE SAMPLING [PT. 2]. [1961] [7]p.
Order from SLA $1.10 61-18719

Trans. of [Sogo Shikenjo Nenpo] (Japan) 1956, Sep, p. 11-17.

DESCRIPTORS: Statistical analysis, *Sampling, *Coal, *Ores, Mining engineering

Contents:
Correlation between maximum size and minimum size
Correlation among grain sizes
Sampling for the estimation of maximum and minimum sizes
Concluding remarks

Mrázek, A., Vlašek, Z., and Zemlička, J.
HET GEBRUIK VAN ULTRAKORTE GELUIDSGOLVEN BIJ HET ONTLEDEN VAN GESTEENTEN (Decomposition of Rocks by Ultrasonics). 4p. MTWL: 968. (Text in Dutch).
Order from OTS or ETC $1.40 61-17530

Trans. of Věstník Ustředního Ustavu Geologického (Czechoslovakia) 1956, v. 31.

DESCRIPTORS: *Rock, Minerals, Petrology, Analysis, *Decomposition, *Ultrasonics.

Rekharski, V. I.
THE DISTRIBUTION OF MOLYBDENUM AND URANIUM IN MINERALIZED ZONES. [1961] 23p. (11 figs. 4 refs. omitted) 11 refs.
Order from OTS or SLA $2.60 61-15957

Trans. of #[Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya] 1959 [v. 24] no. 8, p. 20-33. Another trans. is available from AGI $4.25.

DESCRIPTORS: Distribution, *Molybdenum, *Uranium, Minerals, Geochemistry, Chemical elements, Geology, Ores, Deposits, Mining engineering.

The paragenesis of pitchblende and molybdenite, and certain particular features of their distribution, are discussed.

Physics of the Atmosphere

Al'pert, Ya. L., Chudesenko, E. F., and Shapiro, B. S.
RESULTATEN DER ONDERZOEKINGEN VAN DE BUITENKANT VAN DE IONOSFEER VOLGENS WAARNEMINGEN AAN DE RADIOSIGNALEN VAN DE EERSTE KUNSTMATIGE AARDSATELLIET (Results of the Research of the Outer Region of the Ionosphere from Observations of the Radio Signals from the First Sputnik) tr. by G.B.J. Overbeek. 17p. 15 refs. MTWL: 945. (Text in Dutch).
Order from OTS or ETC $1.85 61-17563

Trans. of Predvaritel'nye Itogi Nauchnykh Issledovaniĭ s Pomoshch'yu Pervykh Sovetskikh Iskusstvennikh Sputnikov Zemli i Raket (USSR) 1958, no. 1, p. 40-52.

DESCRIPTORS: *Satellite vehicle research, Radiosignals, Ionosphere.

Gringauz, K. I., Bezrukikh, V. V., and Ozerov, V. D.
RESULTS OF MEASURING POSITIVE-ION DENSITIES IN THE IONOSPHERE WITH ION TRAPS IN THE THIRD SOVIET EARTH SATELLITE (Rezul'taty Izmerenii Kontsentratsii Polozhitel'nykh Ionov v Ionosfere Metodom Ionnykh Lovushek na Tret'em Sovetskom Sputnike Zemli). Dec 61 [48]p. 18 refs. RTS 1940.
Order from OTS or SLA $4.60 62-13589

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 6, p. 63-100.

DESCRIPTORS: *Satellite vehicle research, *Ionosphere, *Ions, Density, Measurement.

Gusev, V. D. and Mirkotan, S. F.
SOME ANOMALIES ENCOUNTERED IN INVESTIGATIONS OF IONOSPHERIC DRIFTS (O Nekotorykh Anomaliyakh pri Issledovanii Ionosfernykh Dreifov) tr. by M. Slade [1961] [14]p. (foreign text included) 6 refs. [CSIRO] Trans. no. 5362.
Order from OTS or SLA $1.60 61-28216

Trans. of Issledovaniya Ionosfery [i Meteorov: Sbornik Statei] (USSR) 1960, no. 3, p. 77-82.

DESCRIPTORS: *Ionosphere, Statistical functions, Radio waves, Diffraction, Motion, Velocity, Electrons, Density, Scattering

In ionospheric irregularities a diurnal dependency is found of the frequency of appearance of the imaginary values of V_C, the deviation of the front of seeming velocities from the linear, and the differences in the autocorrelative functions at the observation sites. These anomalies reach the maximum values during the sunlit part of the day, which indicates the connection of the irregularities generation and their movements with the intensity of the solar radiation. All the anomalies cannot be explained as the result of insufficiency of the readout volume, because they are most prominently expressed in the day-time when the readout volume is more than during the night. When the full correlation method is used the occurrence of the imaginary V_C is usually connected with the disturbance of the scan. The existence of this anomaly may indicate the necessity of choosing the optical dimensions of the measuring triangle, and when the anisotropy of the irregularities forms is observed, then also of its orientation. The anomalies also indicate the necessity of a serious analysis of the usually applied correlation method of the study of the ionospheric irregularities for its development and detailed determination of the conditions of its application. (Author) (See also 61-23710)

Hershman, B. N. and Hinzburg, W. L.
OVER HET MECHANISME VAN HET ONTSTAAN VAN IONOSPHERISCHE INHOMOGENITEITEN (The mechanism of the formation of ionospheric heterogenity) tr. by G.B.J. Overbeek. 9p. 14 refs. MTWL: 823. (Text in Dutch).
Order from OTS or ETC $1.55 61-17522

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100, no. 4, p, 647-650.

DESCRIPTORS: *Ionosphere, *Radiosignals, Scattering, Theory.

Mirkotan, S. F. and Drachev, L. A.
PHASE-METHOD STUDY OF LARGE-SCALE INHOMOGENEITIES IN THE IONOSPHERE. tr. by E.R. Hope. 5p. MTWL: 922.
Order from OTS or ETC $1.40 61-17586

Trans. of Mezhdunarodnyĭ Geofizicheskiĭ God. Informatsionnyĭ Byulleten' (USSR) 1958, no. 4, p. 56-57.

DESCRIPTORS: Ionosphere, Structure, Phase measurements, Radiowaves.

Rudakov, V.A.
RESULTS OF ROCKET MEASUREMENTS ON ELECTRON CONCENTRATION IN THE IONOSPHERE UP TO A HEIGHT OF 200 KM, MADE IN 1959-60. 1961, 2p. 3 refs.
Order from STS $2.90 STS-R6221

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 10, p. 102-103.

DESCRIPTORS: *Ionosphere, *Electrons, Density, Determination, *Rocket research, Satellite vehicle research.

ENGINEERING

SKIPS VOOR STEENKOLENMIJNEN MET VERTICALE SCHACHTEN. TYPE EN VOORNAAMSTE GEGEVENS (Skips for Coal Mines with Vertical Shafts. Type and Principal Data) tr. by G.J.M. Fritschy. 5p. MTWL: 897. (text in Dutch).
Order from OTS or ETC $1.40 61-17606

Trans. of Gosudarstvennyĭ Obshchesoyuznyĭ Standart (USSR) no. 3866-47.

DESCRIPTORS: *Coal, Mines, *Hoists.

Akhmatov, A.
PROPOSED REVISION OF ENGINEERING CURRICULUM; TO PERFECT THE SYSTEM OF ADVANCED TECHNICAL EDUCATION. 20 Dec 61 [24]p. 1 ref. JPRS: 11593.
Order from OTS or SLA $2.60 62-13851

Trans. from Ekonomicheskaya Gazeta (USSR) 1961, no. 10, p. 19-20.

DESCRIPTORS: *Engineering, Physics, Engineering personnel, Personnel, Training, *Education.

Belaenko, F. A.
DE SPANNINGEN RONDOM EEN CIRKELVORMIGE MIJNSCHACHT IN EEN ELASTISCH-PLASTISCHE BODEM (The stresses around a circular shaft in an elastic-plastic soil). 20p. 5 refs. MTWL-583. (text in Dutch).
Order from OTS or ETC $1.85 61-17298

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya 1950, no. 6, p. 914-925.

DESCRIPTORS: *Soils, Plasticity, Elasticity, *Shafts, Mining engineering, *Stresses.

Gukasov, N. A.
BOTTOM HOLE PRESSURE CHANGES WHILE RUNNING OR PULLING DRILL PIPES OR CASING. 11p. 7 refs. MTWL: 847/1.
Order from OTS or ETC $1.55 61-17355

Trans. of Neftyanoe Khozyaĭstvo (USSR) 1957, no. 11, p. 51-54.

DESCRIPTORS: Pipes, *Drilling machines, Pressure, Soils, Theory.

Kheĭn, A. L.
UNSTEADY FLOW OF LIQUID AND GAS TO A PERFORATED WALL OF A DRILL HOLE AT CONSTANT GAS OIL RATIO. 8p. 3 refs. MTWL: 739.
Order from OTS or ETC $1.55 61-17284

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 91, no. 5, p. 1039-1042.

DESCRIPTORS: *Fluid flow *Porous materials, Mining engineering, Gas flow.

Lyubimov, B. N.
DE GRONDSLAGEN VAN DE MECHANICA VAN EEN VANGINRICHTING VOOR SCHACHTKOOIEN, DIE WERKT DOOR WRIJVING LANGS GELEIDINGSBOMEN (Fundamentals of the mechanics of a gripping device for pit cages, functioning by friction along bar guides). 15p. MTWL: 597. (Text in Dutch).
Order from OTS or ETC $1.85 61-17292

Partial trans. of Ugol'(USSR) 1951, v. 26, no. 9, p. 18-22.

DESCRIPTORS: *Hoists, Mining engineering, *Self-locking fasteners, Theory, *Safety devices.

Umarov, G. Ya., Alimov, A., and Ovechkin, N. F.
A HIGH-SPEED ELECTRODYNAMIC MEMBRANE VALVE. 3 Oct 61 [3]p. MCL-1111/1+2. AD-265 685
Order from OTS or SLA $1.10 61-28980

Unedited rough draft trans of #Byulleten' Izobretenii (USSR) 1960, no. 9, p. 57.

DESCRIPTORS: *High vacuum valves, Valves, Membranes, Electric currents, Design, Electrical equipment, *Vacuum apparatus.

This is a high-speed electrodynamic membrane valve for the admission of small amounts of gas into a high-vacuum chamber; it consists of a plate and a spiral, beneath the plate, through which an electric capacitor discharge current is passed when the valve is opened. It has the following special feature: in order to reduce the valve opening time to 10-20 μsec, and regulate this time, the plate is made in the form of an elastic diaphragm, pressed against the seat by the central pressure control screw. (Author)

Aeronautical Engineering

Andrenko, G. I.
SEVERAL AERODYNAMIC PROBLEMS ASSOCIATED WITH JET DEFLECTION (Nekotorye Voprosy Aerodinamiki Samoleta s Otklonennoi Struei Gazov Reaktivnogo Dvigatelya). [1961] [23]p. (foreign text included). DSIR NLL M. 4056.
Order from OTS or SLA $2.60 61-28206

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1960, no. 2, p. 3-13.

DESCRIPTORS: *Jet planes, *Short take-off planes, Airplane models, Model tests, *Jets, Deflection, Drag, Lift, *Aerodynamics

When making STOL aircraft, it is desirable to use special means of deflecting the jets. A deflected jet from an engine interacts with the oncoming stream and causes definite alterations in the flow pattern round the aircraft. In this article we deal with several problems to do with the mutual influence between the aircraft and the deflected jet. Changes in lift drag characteristics at subsonic flight velocities are found for various angles of deflection and ratios of deflected jet to the oncoming stream velocities. Two model jet aircraft were used. In model No. 1 the engine was placed at the rear of the fuselage, whilst in model No. 2, engines were podded under the wings. The engine jets were simulated by leading compressed air to the models. (Author)

Grinev, L. A.
AN AERONAUTICAL SIGHT FOR HOMING AN AIRCRAFT FROM AN ARBITRARY COURSE TO A GIVEN POINT ALONG THE COURSE. 21 Nov 61 [4]p. MCL-1310. AD-267 733
Order from OTS or SLA $1.10 62-15159

Unedited rough draft trans. of #Byulleten' Izobretenii (USSR) 1960, no. 13, p. 56-58 (Russian patent 129837).

DESCRIPTORS: *Aircraft, *Homing devices, Flight paths, Automatic pilots, Remote control systems, Control systems, Navigation computers, Computers, Resistors, Scheduling.

This aeronautical sight for homing an airplane from an arbitrary course to a given point along the set flight-path is equipped with a revolving mirror for continuous sighting of the given point on the terrain. It is coupled with a resistorized computer which controls the autopilot such that the plane swings in a circular arc which is tangent to the given flight path at the required point. (Author)

Sunakawa, Megumi.
THERMAL DEFORMATION OF A RECTANGULAR PLATE SUBJECTED TO KINETIC HEATING (WHEN FOUR SIDES ARE CLAMPED: TECHNICAL THESIS. [1961] [18]p. (foreign text included) 11 refs.
Order from SLA $1.60 62-20553

Trans. of Nihon Koku Gakkaishi (Japan) 1961, v. 9, no. 85, p. 37-42.

DESCRIPTORS: Theses, *Metal plates, Deformation, Temperature, Distribution, *Aerodynamic heating, Heating, Elasticity, Thickness, Thermal stresses, Partial differential equations.

The thermal deformation of a rectangular plate, subjected to an arbitrary symmetrical temperature distribution, is analyzed for the case where the edges of the plate are clamped in addition to the previous paper for the case of simple support. Taking the finite deformation into account, the fundamentel non-linear simultaneous partial differential equations for the thermoelastic problem are derived from the variational principle and are solved, and it is shown that, if there exists the temperature gradient through the thickness of the plate as seen in the aerodynamic heating, the plate starts to deflect at the moment of heating and does not exhibit the buckling phenomenon according to the mode of temperature distribution and the boundary conditions. Some numerical examples are given (1) for the case where the temperature distribution through the thickness is specified as linear, and (2) for the case of instantaneous heating where the temperature distribution through the thickness is a function of time, and then some discussions on the analytical results are given. (Author)

Zhigarev, P.
MANUAL ON LOADING AND LOAD CENTERING OF CIVIL AIR FLEET AIRCRAFT WITH GAS TURBINE ENGINES. 13 Sep 61 [65]p. MCL-1107. AD-265 682.
Order from OTS or SLA $6.60 62-13075

Unedited rough draft trans. of mono. Rukovodstvo po Zagruzke i Tsentrovke Samoletov GVF s Gazoturbinnymi Dvigatelyami, Moscow, 1958, 61p.

DESCRIPTORS: *Civil aviation, *Aircraft, Loading, Load distribution, Instruction manuals.

Chemical Engineering

AZERBAIDZHAN OIL INDUSTRY, 1940, VOL. 20, NO. 4: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 6p.
Order from OTS or SLA $1.10 61-20465

Abstract trans. of Azerbaidzhanskoe Neftyanoe Khozyaistvo (USSR) 1940, v. 20, no. 4, p. 7-9 and 39-44.

DESCRIPTORS: *Oils, Petroleum industry, Abstracting, Substitutes, *Gilsonite, *Furfurals, Refineries, Distilling plants, Fuel oil.

Contents:
Azerbaidzhan oil industry before nationalization, by Kh. G. Vezirov
Substitutes for gilsonite from furfural extracts obtained in refining automobile distillates, by D. N. Bukh and M. M. Dreizina.

AZERBAIDZHAN OIL INDUSTRY, 1940, VOL. 20, NO. 5: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 8p.
Order from OTS or SLA $1.10 61-20466

Abstract trans. of Azerbaidzhanskoe Neftyanoe Khozyaistvo (USSR) 1940, v. 20, no. 5, p. 3-8, and 38-44.

DESCRIPTORS: *Petroleum industry, Abstracting, Periodicals, Indexes, Tractor engines, Fuels, Natural gas, Kerosene, Sodium compounds, Carbonates, Chemical reactions

Contents:
Methods of application of natural gas for autotractor engines in the oil industry, by K. F. Mikhailov
Alkali treatment of kerosene using calcined soda, by A. A. Markin and L. N. Frumen.

BULLETIN OF THE ACADEMY OF SCIENCES USSR. DEPT. OF TECHNICAL SCIENCES, 1942, NO. 1/2: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 6p. 6 refs.
Order from OTS or SLA $1.10 61-20502

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1942, no. 1/2, p. 29-44, 97-102, 105-107.

DESCRIPTORS: *Fuels, *Combustion, Mathematical analysis, Gases, Particles, *Refractory materials, Hydrogenation, Sintering, *Coal, Chemical reactions, *Catalysts, Heat transfer, Electric furnaces.

Contents:
Similarity of processes of firing and design of firing devices, by A. M. Gurvich
Effect of slight hydrogenation of the sintering properties of coals, by T. A. Kukharenko and E. M. Taits
Methods of determination of the thermal effect of catalytic reactions, by M. G. Gonikberg.

Baibakov, N. K.
FOR FURTHER INCREASE OF THE KUBAN' PETROLEUM AND GAS INDUSTRY. 24 Oct 61 [11]p. JPRS: 10764.
Order from OTS or SLA $1.60 62-13323

Trans. of Neftyanoe Khozyaistvo (USSR) 1961, v. 39, no. 3, p. 1-6.

DESCRIPTORS: *Petroleum industry, *Natural gas, Well logging, Deposits, Production, Mining engineering.

In 1961 the main problem is a search for new deep producing strata at the existing oil fields. The main objective of the exploration will be the highly porous deposits of the Tertiary and Mesozoic periods. For the discovery of deep, highly productive strata it is planned to drill up to 190,000 meters of new wells, which is almost eight times as many as in 1958. (Extract)

Barbier, P.
PNEUMATIC TRANSPORT, RESULTS OF EXPERIMENTS ON THE PNEUMATIC TRANSPORT OF LIME, PTS. 1-3. Nov 61.
Order from BISI £9 10s BISI-2318

Trans. of Manutention (France) 1960, June/July, p. 113-138; Aug/Sep, p. 147-150; Nov, p. 129-138.

DESCRIPTORS: *Calcium compounds, *Oxides, Powder alloys, Powder metallurgy, Storage, *Pneumatic devices, *Transportation, Steel industry.

Contents:
Storage of powdered lime
The pneumatic transport of powdered lime by auger
Basic data for laying out a scheme for the pneumatic transport of powdered lime (with an introduction by G. Husson on applications in the steel industry).

Becker, Rudolf.
USE OF REGENERATORS IN LOW TEMPERATURE TECHNIQUE. PARTICULARLY FOR THE ENRICHMENT OF ETHYLENE FROM COKE OVEN GAS. [1961] [15]p.
Order from SLA $1.60 61-20963

Trans. of Linde Ber[ichte aus] Tech[nik und] Wiss[enschaft?] 1958, no. 3, p. 25-32.

DESCRIPTORS: *Ethylenes, Production, Temperature, Coke, Gases, Separation, Heat transfer, Costs, *Heat exchangers, Coal gas.

Charnyĭ, I. A.
CALCULATION OF THE RECOVERY OF A PARTIALLY PENETRATING WELL AT BREAKTROUGH OF BOTTOM WATER OR GAS; 8p. 2 refs. MTWL: 728.
Order from OTS or ETC $1.55 61-17311

Trans. of Akademiya Nauk SSSR. Doklady 1953, v. 92, no. 1, p. 17-20.

DESCRIPTORS: *Mineral oil, Production, Water, Gases, Penetration.

Chekalyuk, E. B., Oganov, K. A. and others.
HEAT TREATMENT OF A DEPLETED RESERVOIR. 11p. MTWL: 841.
Order from OTS or ETC $1.55 61-17362

Trans. of Neftyanoe Khozyaĭstvo (USSR) 1954, v. 32, no. 2, p. 33-38.

DESCRIPTORS: *Mineral oils, Production, Heating, Heat transfer, *Injection.

Chernyak, I.
FOURTH PLENARY SESSION OF THE CENTRAL BOARD OF THE NTO (NAUCHNO-TECKHNICHESKOE OBSHCHESTVO) (SCIENTIFIC-RESEARCH SOCIETY) OF THE GAS AND OIL INDUSTRY. 2 Nov 61 [6]p. JPRS: 10910.
Order from OTS or SLA $1.10 62-13384

Trans. of Neftyanoe Khozyaistvo (USSR) 1961, v. 39, no. 2, p. 67-68.

DESCRIPTORS: *Natural gas, *Petroleum industry, *Electric power production, *Oils, Refineries, Industrial equipment, Gas flow, Semiconductors, Plasma physics, Fuels.

Chien, H. L.
VENTURI SCRUBBERS. [1961] 12p.
Order from OTS or SLA $1.60 61-20518

Trans. of [Hua Hsüeh Shih Chieh] (Chinese People's Republic) 1959, v. 14, June, p. 287-289.

DESCRIPTORS: Chemical industry, Particles, Disposal, Cleaning, Gases, Impurities, *Venturi tubes.

In 1956 the Singyeh Sulfuric Acid Works in Shanghai installed a Venturi scrubber in place of the electrostatic precipitator in the tail gas cleaning section of the contact-process sulfuric acid plant. After operating the plant for more than three years, it has witnessed the satisfactory performance of the Venturi scrubber. Besides using the Venturi scrubber for cleaning the tail gas, another Venturi scrubber was installed last year on the SO_2 gas cleaning section after the fluidized-solid pyrite roaster. The Venturi scrubber has proved equally satisfactory as dust remover, gas cooler, as well as mist remover. (Author)

Greco, G. and Soldano, U.
NEW PLANTS FOR THE MANUFACTURE OF FORMALDEHYDE FROM METHANOL. [1961] 15p. (3 figs. omitted) 21 refs.
Order from SLA $1.60 61-20895

Trans. of Chemie-Ingenieur-Technik (West Germany) 1959, v. 31, no. 12, p. 761-765.

DESCRIPTORS: Industrial plants, *Formaldehyde, *Methanols, Production.

Gul', V. E. and Chemin, I. M.
THE MECHANISM OF THE TRANSITION FROM FORCED ELASTIC TO HIGHLY ELASTIC RUPTURE (O Mekhanizme Perokhoda ot Vynauzhdennoelasticheskogo k Vysokoelasticheskomu Razryvu). Dec 61 [7]p. 7 refs. RTS 1960.
Order from OTS or SLA $1.10 62-13591

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2, no. 11, p. 1613-1615.

DESCRIPTORS: *Elasticity, *Phase transitions, *Rupture, Polymers, Glass, Elastomers, Stresses, Distribution, Deformation, Light, Polarization.

The transition from polymer glass rupture to elastomer rupture is accompanied by a characteristic change in the distribution of stresses and strains in the specimen. A rather sharp boundary between the highly oriented and unoriented parts of the material is characteristic of glass-like polymers. In the limiting, case, the zone of high strain values of the macromolecules (zone of stress-concentrations) forms a plane perpendicular to the acting force. With a rise in temperature, the transition from one zone to the other becomes less pronounced. For polymers in the rubber-like state, a characteristic feature is the distribution of the zones of equal strain along the line of action of the deforming force and the presence of additional orientation at the site of rupture development. (Author)

Hesky, Hans.
ONE-TOWER LOW PRESSURE ABSORPTION INSTALLATIONS FOR THE PRODUCTION OF NITRIC ACID FROM NITROSE GASES. [1961] [15]p. 3 refs.
Order from SLA $1.60 61-20478

Trans. of Chemie-Ingenieur-Technik (West Germany) 1961 [v. 33, no. 1] p. 27-31.

DESCRIPTORS: *Towers (Chemistry), Absorption, *Nitric acid, *Nitrogen compounds, *Gases, Production.

An absorption tower for low pressure conditions has been developed in which the tray spacing is greater in the upper part and the spaces between the trays are subdivided by perforated plates. As a result very favorable absorption conditions are obtained even with a small number of trays. (Author)

Jacob, H.
XILITE: CERTAIN CRITICAL CONSIDERATIONS WITH RESPECT TO ITS DEFINITION AND METHODS OF DETERMINATION (Xylite Einige Kritische Bemerkungen Hinsichtlich Definition und Bestimmungsmethodik). [1961] [25]p. (foreign text included) 11 refs.
Order from SLA $2.60 62-10210

Trans. of Braunkohle [Wärme und Energie] (West Germany) 1961 [v. 13] no. 7, p. 276-282.

DESCRIPTORS: *Coal, Separation, *Wood, Combustion, Carbonization, Mining engineering, Solvent extraction.

Johansen, O.
USE OF CONTINUOUS DISTILLATION AT VEB KOMBINAT GÖLZAU (Anwendung der Kontinuierlichen Destillation im VEB Kombinat Gölzau). [1961] 11p. (7 figs. omitted)
Order from SLA $1.60 61-20961

Trans. of Bergbautechnik (Germany) 1954, v. 4, no. 4, p. 230-232.

DESCRIPTORS: *Distilling plants, *Coal tar, Industrial plants, Gasoline, Temperature, Vapors, Production, Chemical analysis, Convection, Radiation, Fuel oil.

Karwat, Ernst.
SAFETY MEASURES IN THE LOW TEMPERATURE SEPARATION OF ACETYLENE-CONTAINING GAS MIXTURES. [1961] 3p.
Order from SLA $1.10 61-20400

Trans. of [Linde Berichte aus Technik und Wissenschaft ?] 1961, no. 11, p. 40-41.

DESCRIPTORS: *Acetylene, *Gases, Mixtures, Separation, Temperature, Safety

Maiorov, D. M., Merkulova, O. P. and others.
THE SELECTION OF MATERIALS FOR APPARATUS FOR THE DIRECT HYDROGENATION OF HIGHER FATTY ACIDS (Podbor Materialov dyla Apparatury Pryamogo Gidrirovaniya Vysshikh Zhirnykh Kislot). Jan 62 [9]p. 1 ref. RTS 1999.
Order from OTS or SLA $1.10 62-13922

Trans. of Khim[icheskaya] Prom[yshlenno]st' (USSR) 1961, no. 3, p. 62-64.

DESCRIPTORS: Materials, *Hydrogenation, *Fatty acids, *Alcohols, Corrosion, Metals, Alloys

Experimental data are presented on the rates of corrosion of various metals and alloys in fatty acids at high temperatures and hydrogen pressures. The experiments established that, for construction of an industrial plant for the direct hydrogenation of fatty acids to alcohols at temperatures up to 50°, low-alloy steels may be used. At temperatures of 70-150° it is necessary to use a steel containing not less than 13% chromium. For temperatures above 150°, iKh 18N 9T steel should be used.

Mironov, S.I., Gal'pern, G.D. and Kolbanovskiĭ, Yu. A
TEMPERATURES AT WHICH MINERAL OIL IS FORMED AND CONVERTED. 5p. 14 refs. MTWL: 852.
Order from OTS or ETC $1.40 61-17344

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 103, no. 4, p. 667-668.

DESCRIPTORS: Mineral oils, *Hydrocarbons, *Chemical equilibrium, Temperature.

Rottmayr, Fritz.
CONTAMINATION OF COKE, BURNER GASES AND CRACKED GASES BY SECONDARY PROCESSES IN THE PURIFICATION OF THESE GASES. [1961] 13p. 16 refs.
Order from SLA $1.60 61-20861

Trans. of [Linde Berichte aus Technik und Wissenschaft?] 1960, no. 10, p. 17-22.

DESCRIPTORS: *Coke, *Gases, Hydrocarbons, *Coal gas, *Contamination, Nitrogen compounds, Oxides, Purification, Water, Microorganisms, Bacteria, Anaerobiology, Anaerobic spores.

Rottmayr, Fritz.
THE PROCESSES FOR REMOVAL OF SMALL QUANTITIES OF ACETYLENE FROM ETHYLENE-ETHANE-MIXTURES IN THE PURE-PREPARATION OF ETHYLENE BY LOW TEMPERATURE RECTIFICATION. [1961] [19]p. 8 refs.
Order from SLA $1.60 61-20890

Trans. of [Linde Berichte aus Technik und Wissenschaft?] 1961, no. 11, p. 32-39.

DESCRIPTORS: *Ethylenes, *Ethanes, Mixtures, *Acetylenes, Separation, Purification, Hydrogenation, Pressure, Temperature, Costs, Waste gases, Gases.

Sapozhnikov, L. M.
PRODUCTION OF METALLURGICAL FUELS FROM GASSY AND WEAKLY CAKING COALS. 15 Jan 60, 2p.
Order from OTS or SLA $1.10 61-20951

Trans. of Akad[emi ya] Nauk SSSR. Lab[oratoriya] Geol[ogii] Ugl'ya. Trudy, 1956, v. 6, p. 137-138.

DESCRIPTORS: *Coal, *Steel industry, Metallurgy, *Coke, Production, Decomposition, Fracture (Mechanics) *Fuels, Liquids, Gases

Snarskiĭ, A. N.
AN INCORRECT EVALUATION OF THE PERSPECTIVES OF THE APPLICATION OF THERMAL DRIVE. 9p. 5 refs. MTWL: 839.
Order from OTS or ETC $1.55 61-17361

Trans. of Neftyanoe Khozyaĭstvo (USSR) 1957, no. 7, p. 31-35.

DESCRIPTORS: *Mineral oils, Production, Heating.

Thau, A.
PRECAUTIONS FOR IMPROVING THE QUALITY OF AMMONIUM SULFATE, PT. I. [1961] 60p. 41 refs.
Order from SLA $5.60 61-20941

Trans. of Oel und Kohle (Germany) 1943, v. 39, no. 9, p. 240-256.

DESCRIPTORS: *Ammonium radicals, *Sulfates, Production, Costs, Quality control, Salts, Coal, Purification.

Thau, A.
PRECAUTIONS FOR IMPROVING THE QUALITY OF AMMONIUM SULFATE, PT. II. [1961] [19]p. 3 refs.
Order from SLA $1.60 61-20945

Trans. of Oel und Kohle (Germany) 1943, v. 39, no. 35/36, p. 788-792.

DESCRIPTORS: *Ammonium radicals, *Sulfates, Production, Quality control, Coal.

See also 61-20941

Uspenskii, V., Gorskaya, A., and Karpova, I.
THE GENESIS OF ALGARITES AND THE PROCESSES OF ANAEROBIC OXIDATION OF PETROLEUM. [1961] [19]p. 11 refs.
Order from OTS or SLA $1.60 62-10426

Trans. of Akad[emiya] Nauk SSSR. Ser[iya] Geolog[icheskaya] 1947, no. 4, p. 89-106.

DESCRIPTORS: *Petroleum, *Geochemistry, Oxidation, Microbiology, Carbohydrates, Albumins, Anaerobic spores, Anaerobiology, Microorganisms, Bacteria, Algae, Decomposition.

Vasilev, S. F. and Glushnev, V. E.
OXIDATIVE REFORMING OF GASOLINES OF THE TUIMAZIN DEVONIAN PETROLEUM. [1961] [7]p.
Order from OTS or SLA $1.10 62-10308

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1947, no. 7, p. 825-828.

DESCRIPTORS: *Petroleum, *Gasoline, Processing, Fractionation, Oxidation, Hydrocarbons, Decomposition, Desulfurization, Purification, Zinc compounds, Chlorides, Chemical reactions.

Vasil'ev, Yu. M. and Charygin, M. M.
ON THE PROSPECTS OF SUPER DEEP DRILLING. 19 Oct 61 [7]p. (10 non-Russian refs. omitted) 9 refs. JPRS: 10626.
Order from OTS or SLA $1.10 62-13231

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii]. Neft' i Gaz (USSR) 1961 [v. 4] no. 4, p. 123-127.

DESCRIPTORS: *Petroleum industry, *Natural gas, Deposits, *Well logging, *Drilling machines, Oils, Production, Mining engineering.

Vuets, M. P.
HYDRAULIC FRACTURING IN THE GORSKNEFT' FIELD. 6p. MTWL: 832.
Order from OTS or ETC $1.55 61-17380

Trans. of Neftyanoe Khozyaĭstvo (USSR) 1956, v. 34, p. 22-24.

DESCRIPTORS: *Hydraulic seals, Mineral oils, Production, *Petroleum.

Wachi, Y., Suzuki, T. and others.
STUDIE OVER DE INDUSTRIELE GROEI VAN GROTE MONOKRISTALLEN AMMONIUMDIHYDROFOSFAAT (Commercial Production of Large Single Crystals of Ammonium Dihydrogen Phosphate). 24p. (foreign text included). 21 refs. MTWL: 902. (text in Dutch).
Order from OTS or ETC $1.91 61-17611

Trans. of Chemical Society of Japan. Journal. Industrial Chemistry Section, 1956, v. 59, no. 4, p. 403-409.

DESCRIPTORS: *Ammonium radicals, Phosphates, *Single crystals, Industrial production.

Zaks, S. L.
INCREASE IN OIL RECOVERY FROM A PARTIALLY DEPLETED RESERVOIR BY HIGH PRESSURE GAS INJECTION. 16p. 5 refs. MTWL: 842.
Order from OTS or ETC $1.85 61-17363

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1955, no. 9, p. 3-13.

DESCRIPTORS: *Mineral oils, Production, Hydrocarbons, Gases, *Injections.

Zelinskii, N. D. and Elagina, N. V.
CATALYTIC TRANSFORMATIONS OF SPIRO-(4, 4)-NONANE. [1961] [2]p. 5 refs.
Order from OTS or SLA $1.10 61-20173

Reprint of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1946, v. 52, p. 227-229.

DESCRIPTORS: *Transformations, *Catalysis, *Spiro compounds, Hydrocarbons, Methanes, Petroleum, Synthesis, Hydrogenation.

Civil Engineering

IRRIGATION: SELECTED ARTICLES. 1961, 45p. 10 refs. PL-480 Int.
Order from OTS $0.50 61-11430

Trans. of Gidrotekhnika i Melioratsiya (USSR) 1959, v. 11, no. 2, p. 7-13; no. 6, p. 3-19, 35-38; no. 7, p. 10-16.

DESCRIPTORS: *Irrigation systems, *Agriculture, Inland waterways, Water supplies, *Reinforced concrete, *Hydraulic systems, Hydrology, Foundations (Structures)

Contents:
Water engineering projects for the seven-year period 1959-1965, by I. T. Vovchenko
Toward better utilization of irrigated lands
Precast curved reinforced concrete canal sections, by S. G. Khlebnikov and others
Prefabricated reinforced concrete canal lining of the Verkhne-Dal'verzinskii system, by N. V. Shragin
Grouting of hydraulic structures subject to the action of artesian ground water, by G. A. Chumakov
The irrigation furrow and layout of the irrigation ditch, by I. I. Budarin

WORKS OF THE HYDROTECHNICAL INSTITUTE "ENG. JAROSLAV CERNI": SELECTED ARTICLES, tr. by Rudolf Blum. 1961, 39p. 8 refs. PL-480 Int.
Order from OTS $0.50 60-21642

Trans. of Hidrotehnicki Institut "Inzenjer Jaroslav Cerni". Saopstenja. Transactions (Yugoslavia) 1954, no. 1 [p. 35-42]; 1956, no. 3 [p. 5-10] and no. 5 [p. 19-26].

DESCRIPTORS: *Electric power plants, *Water tanks, *Sedimentation, Soils, Turbines, *Design, Fluid flow, Hydrodynamics, Cleaning, *Earth Dams, Water supplies, Terrain, *Civil engineering, Mountains, Intake valves, *Hydroelectric power systems.

Contents:
Sedimentation tank at the conduit of Jelovska River, by S. Bruk
Model tests of the Radoinja Earth Dam, by S. Bruk
On some types of intake structures for mountain watercourses, by M. Vojinovic.

Balogh, A.
BESTIMMUNG DER BELASTUNGSFÄHIGKEIT VON GUMMIREIFEN MIT HILFE EINES NOMOGRAMMS (Determination of the Load Capability of Rubber Hoops with the Help of a Nomogram), tr. by Wessely. 8p. MTWL: 937. (Text in German).
Order from OTS or ETC $1.55 61-17571

Trans. of Közlekedestuomanyi Szemle (Hungary) 1956, v. 2, p. 74-75.

DESCRIPTORS: *Tire tubes, Rubber, Nomographs, Determination, *Load distribution.

Duarte, Rodolfo Adrian.
METHOD OF DETERMINING THE UNIFORMITY OF THE MIX IN THE CONSTRUCTION OF SOIL-CEMENT AND SUB-BASES. [1961] [16]p.
Order from SLA $1.60 61-18777

Trans. of [Laboratorio fe Ensayo de Materiales e Investigaciones Tecnologicas. Publicaciones] (Argentina) 1959, no. 9, p. 49-60.

DESCRIPTORS: *Soils, Stabilization, Moisture, Determination, Construction, Roads, Pavements, *Cements, Mixtures

Gutyar, E. M.
WIDERSTAND DES RADES BEIM SCHLINGERN IN DER RADSPUR (Resistance of the Wheel at the Wobbling in the Wheeltrack) 11p. 4 refs. MTWL: 940. (Text in German).
Order from OTS or ETC $1.55 61-17568

Trans. of Sel'khozmashina (USSR) 1955, v. 2, p. 23-25

DESCRIPTORS: *Vehicle wheels, Roads, *Resistance.

Reis, Th. and Ceintrey, M.
PHYSICOCHEMICAL ASPECTS OF ADHESION IN HIGHWAY ENGINEERING (Aspects Physico-chimiques de l'Adhésion dans l'Industrie Routière). [1961] [54]p. 96 refs.
Order from SLA $5.60 62-10093

Trans. of Technique Moderne-Construction (France) 1954, v. 9, no. 6 [p. 171-178] and no. 7 [p. 249-255].

DESCRIPTORS: *Adhesion, Physical chemistry, Civil engineering, *Bridges, *Roads, Construction, Surface tension, *Binders, Solids.

Stefanovich, J. G.
ERMITTLUNG DER SEITLICHEN REAKTIONEN, DIE AUF DIE Kfz-ACHSEN IN DER KURVE WIRKEN (Determination of the Indirect Reactions, Acting Upon the Kfz-axes in the Curve). 8p. 6 refs. MTWL: 936. (Text in German).
Order from OTS or ETC $1.55 61-17572

Trans. of Avtomobil'naya i Traktornaya Promyshlennost' (USSR) 1956, no. 8, p. 7-9.

DESCRIPTORS: *Axle shafts, Vehicles, Roads, *Pressure.

Ul'yanov, N. A.
PRINCIPLES FOR THE SELECTION OF PARAMETERS AND OPERATING CONDITIONS OF ROLLERS ON PNEUMATIC TYRES FOR SOIL COMPACTION. 10p. MTWL: 941.
Order from OTS or ETC $1.55 61-17567

Trans. of Moskovskiĭ Avtomobil'no-Dorozhnyĭ Institut Trudy (USSR) 1955, v. 16, p. 120-133.

DESCRIPTORS: *Tire tubes, *Road building equipment. Mechanical engineering.

Electrical and Electronic Engineering

AUTOMATION, 1961, NO. 3: SELECTED ARTICLES. 11 Dec 61 [39]p. 11 refs. JPRS: 11353.
Order from OTS or SLA $3.60 62-13682

Trans. of Avtomatyka (USSR) 1961, no. 3, p. 45-54, 79-80, 88-92.

DESCRIPTORS: *Automation, Radio equipment, Electronic equipment, Reliability, Maintenance, Probability, Control systems, Telemeter systems, Computers, Digital computers, Automatic, Industrial production, Feedback.

Contents:
On the maintenance of an optimum regime for long operation systems, by A. I. Perrote
On methods of formulating the extremum indicator in self-tuning systems, by P. I. Chynaev
Brief report on the work of the Institute of Mechanical Engineering and Automation. Academy of Sciences UkSSR (L'vov) in the field of automation, telemechanics and computer engineering.

COMPLETE AUTOMATION OF NEW UNIT POWER STATIONS (O Kompleksnoi Avtomatizatsii Novykh Blochnykh Elektrostantsii) tr. by V. Burdon. 10 Mar 61 [14]p. 3 refs. Trafford Park trans. no. 2756; [DSIR NLL] M. 3233.
Order from OTS or SLA $1.60 62-15251

Trans. of Elekt[richeskie] Stantsii (USSR) 1959 [v. 30] no. 10, p. 10-15.

DESCRIPTORS: *Power plants, *Automation, Control systems.

KRONIEK. TITELS EN SAMENVATTINGEN VAN RAPPORTEN EN MEDEDELINGEN VAN DE WETENSCHAPPELIJKE CONFERENTIE VAN HET MINISTERIE VOOR HOGER ONDERWIJS IN DE RADIO EN ELEKTRONIKA (Chronicle. Titles and Summaries of Reports and Communications of the Scientific Conference of the Ministry of Higher Education in Radioelectronics) tr. by G.B.J. Overbeek. 29p. MTWL: 877. (text in Dutch).
Order from OTS or ETC $2.43 61-17624

Trans. of Radiotekhnika i Elektronika (USSR) 1956, no. 6, p. 878-887.

DESCRIPTORS: *Radio communication systems, Electronics, Reports.

METHOD FOR INCREASING THE DEFINITION OF PHOTOGRAPHIC, ROENTGENOGRAPHIC, AND FLUOROSCOPIC IMAGES (Sposob Povysheniya Chetkosti Fotograficheskikh, Rentgenograficheskikh, i Rentgenoskopicheskikh Izobrazhenii). 21 July 61, 2p. H-9316; JPRS (R-1769-D).
Order from OTS $0.50 61-31641

Trans. of description of invention for inventor's certificate (patent) 115796, cl. $21a^1$, 32_{36}, 57b, 12_{08}, announced 14 Nov 56.

DESCRIPTORS: Memory devices, *Television, *Cathode ray tubes, Image tubes, Storage tubes, Iconoscopes, *Television cameras, Electronic equipment.

Use is made of double television scanning of the image in mutually perpendicular directions with intermediate storage of the television image and the application of devices for correcting definition ("aperture-type" correcting devices) after the first and the second scanning of the image. The special feature of this method consists of the application of a photograph of the television image for intermediate storage, or the application of an electron memory tube or television camera with a storage target as the intermediate memory. Moreover, in order to achieve visual control of the degree of correction of definition with long scanning times, a memory device in the form of a graphecon or skiatron is used after the second scanning of the image. (Extract)

RADIO ENGINEERING, 1961, VOL. 16, NO. 6, Nov 61, 119p.
Order from PP $30.00/year ($15.00/year to individuals)

Trans. of Radiotekhnika (USSR) 1961, v. 16, no. p. 3-[80].

DESCRIPTORS: *Electronic equipment, *Radio equipment, Periodicals, Frequency multipliers, Low pass filters, Meteors, Detection, Waveguides, Ferrites, Pulse counters, Microwave amplifiers, Amplifiers, Crystal oscillators, Oscillators, High frequency, Voltage, Stabilization, Television communication systems, History.

Angelov, B. P., Lobanov, E. M. and others.
DE WERKING VAN EEN ELECTRONENSTROOM OP DE GEVOELIGE LAAG VAN VENTIELFOTOCELLEN (Deĭstvie Potoka Elektronov na Chuvstvitel'nyĭ Cloĭ Ventil'nykh Fotoelementov) (The action of an electron beam on the sensitive layer of a photoelectric cell) tr. by J. H. van Santen. 8p. (foreign text included) MTWL: 709. (Text in Dutch).
Order from OTS or ETC $1.55 61-17332

Trans. of Akademiya Nauk SSSR. Doklady 1952, v. 85, no. 4, p. 733-735.

DESCRIPTORS: *Electron beams, *Photoelectric cells, Sensitivity.

Burgsdorf, V. V., Egorova, L. V. and others.
CORONA LOSSES ON THE EHV TRANSMISSION LINES. [1961] [13]p. 5 refs.
Order from OTS or SLA $1.60 61-10669

Trans. from Elektricheskie Stantsii (USSR) 1960 [v. 31] no. 8.

DESCRIPTORS: *Electrical corona, *Transmission lines, Climatic factors, Electrical equipment, Transformers, High frequency, Radio communication systems, Electronic circuits, Mathematical analysis.

Danielou, G.
ELECTRICAL EQUIPMENT. Investigation Rept., Pt. 1. [1961] [39]p.
Order from SLA $3.60 61-18363

Trans. of l'Acierie Electrique [sic] 1957, Cahier [du Cessid] no. 1, investigation rept. pt. 1, 29p.

DESCRIPTORS: *Electric furnaces, *Electrical equipment, Electric arcs, Design, Operation, Control, Circuits.

Doganovskii, S. A.
DELAY LINE. 6 Oct 61 [4]p. MCL-1308/1+2.
Order from OTS or SLA $1.10 61-28989

Unedited rough draft trans. from Byulleten' Izobretenii (USSR) 1960, no. 9 (USSR patent [appl.] announcement no. 635971/26, 6 Aug 59).

DESCRIPTORS: *Delay lines, Design, Delay circuits, Circuits.

A delay line consisting of memory capacitors commutated by means of relay contacts and cathode followers has the following special features: to simplify the device and to increase the accuracy of reproducing a function at the output of the delay line, each cell consists of two capacitors, one of which is switched to the preceding cell and the other to the following cell. (Author)

Kasperavichus, P. P.
A TWO-POSITION CONDUCTING LIQUID LEVEL CONTROL. 2 Nov 61 [4]p. MCL-1418. AD-266 773.
Order from OTS or SLA $1.10 62-13558

Unedited rough draft trans. from #Byulleten' Izobreteniĭ (USSR) 1960, no. 15 (Russian patent 130691, cl. 42e, 34, appl. 19 Nov 58, no. 612074/26).

DESCRIPTORS: *Liquid level control, Electrical equipment, Control valves, Pumps.

A two-position conducting liquid level control with two electrode pickups of the upper and lower levels and one electromagnetic relay has the following special features: to simplify the design of the control one normally open contact is used in the electromagnetic relay to shunt the electrode pickup of the upper limit of the level of the liquid, and the others are for controlling the electric drive of a control valve or an electric pump motor. (Author)

Kazovskii, E. Ya. and Kostenko, M. P.
CONTEMPORARY METHODS OF EXAMINING TRANSIENTS IN A. C. MACHINES (Sovremennye Metody Rassmotreniya Perekhodnykh Protsessov v Elektricheskikh Mashinakh Peremennovo Toka) tr. by V. Burdon. 29 Mar 61 [29]p. (foreign text included) 12 refs. Trafford Park trans. no. 2764; [DSIR NLL] M. 3232.
Order from OTS or SLA $2.60 62-15248

Trans. of Akad[emiya] Nauk SSSR. Otd[elenie] Tekh[nicheskikh] Nauk. Izv[estiya]: Energ[etika] i Avt[omatika] 1959, no. 4, p. 11-22.

DESCRIPTORS: *Electric machinery, Alternating current, *Transients, Mathematical analysis, Frequency, Circuits.

Knyazev, K. K., Konstantinov, N. A. and others.
A COMBINED-VOLTAGE GENERATOR. 3 Oct 61 [5]p. MCL-1317; AD-265 721.
Order from OTS or SLA $1.10 61-28983

Unedited rough draft trans. from Byulleten' Izobretenii (USSR) 1960, no. 16.

DESCRIPTORS: *Voltage, *Generators, Waveform generators, Frequency multipliers, Circuits, Design

The basic patent describes a generator for complex-shape voltage; this generator includes a sine-wave generator, a frequency multiplier, and a summation unit. The proposed generator is a further development of the generator described in patent No. 96261, and assures synchronous change of the frequencies of the higher harmonics with a change in the basic frequency, and the reception of signals with given distortions in a wide frequency range. This is achieved by virtue of the fact that it contains, in addition to a generator with a fixed tuning, a generator with smooth returning of the frequency. This generator produces a series of harmonics which are summed with those of the fixed-tuning generator, and also produces voltage whose frequency equals the difference between the fixed and the smoothly-changing frequencies. In addition, the circuit of the proposed generator includes phase shifters and signal-level regulators, which produce a given phase shift and values of the amplitudes of the total

harmonic voltages, and an additional summer for adding the voltage of the first harmonic to the voltage obtained at the output of the basic harmonic summer. (Extract)

Koenig, I.
ABOUT THE GAS ABSORPTION OF INSULATING OILS. [1961] (5 figs. omitted) 7 refs.
Order from SLA $1.10 61-20739

Trans. of Elektrie (Germany) 1961, v. 15, May, p. 166-168.

DESCRIPTORS: *Mineral oils, Delectrics, Resistance, Gases, *Insulating materials, Electric insulation, Absorption, Transformers, Oils.

Kogan, V. S. and Pines, B. Ya.
SCHERPFOCUS-ROENTGENBUIS MET INSTELBARE AFMETING VAN DE BRANDVLEK (A fine focus X-ray tube with regulated focal spotsize) tr. by K. Compaan. 11p. (Foreign text included). 4 refs. MTWL: 715. (Text in Dutch).
Order from OTS or ETC $1.55 61-17318

Trans. of Akademiya Nauk SSSR. Izvestiya Seriya Fizicheskaya, 1952, v. 16, no. 3, p. 339-343.

DESCRIPTORS: *X-rays, Electron tubes, *Focusing, Automation.

Kotov, P. A.
HET ONTWERPEN VAN STARTSTOP-SYNCHRONE TELEGRAAFSYSTEMEN (Designing of Start-stop Telegraph Systems) tr. by G.B.J. Overbeek. 15p. 10 refs. MTWL: 876. (text in Dutch).
Order from OTS or ETC $1.85 61-17623

Trans. of Elektrosvyaz (USSR) 1956.

DESCRIPTORS: *Telegraph systems, Design.

Krainii, K. I., Polyakov, V. T., and Trubachev, B. V.
AUTOMATIC MAINTENANCE OF THE VOLTAGE OF A DIRECT-CURRENT GENERATOR WITH THE AID OF A SATURATION CHOKE COIL. 2 Nov 61 [7]p. MCL-1346.
Order from OTS or SLA $1.10 62-13559

Unedited rough draft trans. of Promyshlennaya Energetika (USSR) 1960 [v. 15] no. 5, p. 23-25.

DESCRIPTORS: *Direct current, *Generators, Automatic, *Voltage regulators, *Radiofrequency coils, Coils.

A saturation choke coil was used to maintain a given voltage on a dc generator of type PN-75, which has a power output of 75 kw, a rotational velocity of 1500 rpm, a voltage of 140 v, and is driven by an asynchroous motor. The generator operates under unequal load conditions from 0 to 200 amp, i.e., brief current overloads of 40% occur. Such operating conditions cause sharp voltage oscillations and thus lead to a temporary disturbance of the technological process. (Author)

Kravchenko, V. S. and Servo, V. I.
A NEW METHOD OF SECURING INTRINSIC SAFETY OF REMOTE CONTROL AND SIGNALLING INSTALLATIONS (Novyi Sposob Obospecheniya Iskrobezopasnosti Ustroistv Teleupravleniya i Signalizatsii) tr. by L. Meyer. [1961] [5]p. 2 refs. S. M. R. E. Trans. no. 4482; DSIR NLL M. 3120.
Order from OTS or SLA $1.10 61-28179

Trans. of Bezop[asnost'] Truda v Promyshl[ennosti] (USSR) 1960, v. 4, no. 11, p. 20-21.

DESCRIPTORS: Safety, *Remote control systems, *Radio signals, Radio communication systems, Electronic circuits, Electrical equipment, Power, Intensity, Transmission, Electric motors, *Mining engineering

The new method of securing the intrinsic safety of external circuits consists of the transmission through the intrinsically safe power cable of a small current providing an accumulation of energy (in a capacity or a battery) at the mechanism in question (electric magnet or electric motor) and of the periodic consumption of this energy when the control signal is given along the intrinsically safe lead. (Extract)

Lebedev, V. L. and Nezhel'skaya, L. Ya.
BROADBAND h-TYPE NEUTRALIZATION IN HIGH-FREQUENCY SEMICONDUCTOR AMPLIFIERS. [1959] 6p. MDF L-129.
Order from OTS $0.50 62-11496

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Radiotekh[nika] i Elektr[onika] (USSR) 1959, no. 1, p. 182-187.

DESCRIPTORS: Broadband, *High frequency, *Amplifiers, Semiconductors, Neutralization, Circuits, Feedback, Design, Numerical analysis

An analysis of two simple h-type broadband neutralization circuits, relations for their computation and results of an experimental verification of one of these circuits is presented. (Author)

Lesota, S. K.
ON A METHOD OF MEASURING THE MUTUAL CORRELATION OF AMPLITUDE AND FREQUENCY FLUCTUATIONS OF A REAL GENERATOR BY THE BERSHTEIN METHOD. [1959] 8p. 8 refs. MDF L-131.
Order from OTS $0.50 62-11498

Trans. of Moscow U. Vestnik. [Seriya] M[atematiki] M[ekhaniki] A[stronomii] F[iziki] Kh[imii] (USSR) 1959, v. 14, no. 1, p. 109-116.

DESCRIPTORS: *Frequency multipliers, *Amplitude modulation, *Phase modulation, Modulation, *Frequency modulation, *Correlation techniques, Statistical functions, Delay lines

In an analysis of the influence of frequency dispersion of the transmitting line on a sinusoid with random amplitude and phase modulation, the expression

$V_2(t) = V_0 [1 + m(t - \tau)] \sin [\omega_0 t - \beta_0 l + \phi(t - \tau)]$

for the output signal of a delay line with linear frequency dispersion was derived which shows that the delay time for the fluctuating components is a group delay time at the fundamental frequency ω_0, i.e., the fluctuations seem to lag behind the phase of the carrier frequency ω_0. This can be explained by the spectral components of the oscillations, found by using the Fourier integral, being certain averages in time. The group delay time for amplitude and frequency fluctuations thus obtained enters into an expression that was derived for the spectral density of the total signal, in agreement with measurements presented by V. S. Troitskiy and V. V. Khrulev (Radiotekh. i Elektron. 1: 831, 1956).

Levin, M. L.
DE EXCITATIE VAN EEN HALFONEINDIGE RADIOGOLFPIJP DOOR EEN OPENING IN DE BODEM. (O Vozbuzhdenii Poluheskonechnogo Radiovolnovoda cherez Otverstie v ego Dne) (Excitation of a semi-infinite waveguide through an aperture in its bottom) tr. by J. H. van Santen. 10p. (foreign text included). 2 refs. MTWL: 706. (Text in Dutch).
Order from OTS or ETC $1.55 61-17329

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1948, v. 18, no. 5, p. 653-656.

DESCRIPTORS: *Waveguides, Excitation.

Mel'gunov, N. M. and Kvyatkovskii, V. M.
SOME PROBLEMS OF THE OPERATION OF THE D. C. TRANSMISSION LINE, STALINGRAD HYDROELECTRIC STATION TO DONBASS. [1961] [7]p. [DSIR NLL] M 4330.
Order from OTS or SLA $1.10 62-13149

Trans. of #Elektrichestvo (USSR) 1961, no. 3, p. 14-17.
Another trans. is available from OTS $1.75 in 61-31550, JPRS-8650, 31 July 61, 60p.

DESCRIPTORS: *Hydroelectric power systems, Direct current, *Transmission lines, Operation.

Mil'shteĭn, V. N. and Rabinovich, A. D.
ONDERZOEK VAN PROCESSEN IN ELECTRISCHE KETENS MET VERANDERLIJKE PARAMETERS (Investigation of processes in electric circuits with varying parameters). 9p. 4 refs. MTWL: 684. (Text in Dutch).
Order from OTS or ETC $1.55 61-17369

Trans. of Elektrichestvo (USSR) 1951, no. 2, p. 68-70.

DESCRIPTORS: Circuits, *Electric currents, Resistance, Capacitance, Analysis.

Mulders, Cornelius Emilius and Visser, Bertus.
METHOD FOR THE AUTOMATIC CONTROL OF A MACHINE FOR SORTING AND FACING DOCUMENTS, AND POSTAGE STAMP ASSOCIATED THEREWITH, tr. by E. F. 10 Oct 61, 4p. (1 fig. omitted).
Order from OTS or SLA $1.10 61-28952

Trans. of French patent 1,092,276, gr. 18, cl. 3, by Administration dite: Staatsbedrijf der Posterijen, Telegrafie en Telefonie (Administration des Postes, Telegraphes et Telephones des Pays-Bas) appl. 28 Apr 53, granted 10 Nov 54, pub. 20 Apr 55.

DESCRIPTORS: Automatic, Control systems, Servomechanisms, *Postal systems, Electric machinery, Luminescent materials, Photoelectric effect

A photoelectric device detects the place of the postage stamp on the surface of a document. The postage stamps are provided with luminescent material and the photoelectric device responds to the luminescent radiation emitted by the postage stamp.

Perov, G. I.
TO THE QUESTION OF COMPUTING THE EFFECTIVE AREA OF REFLECTION OF SURFACE TARGETS IN THE CENTIMETER WAVE BAND[K Voprosu o Rashete Effektivnoi Ploshchadi Otrazheniya Poverkhnostnoi Tseli v Santimetrovom Diapazone Voln]. [1958] 5p. 3 refs. MDF P-128.
Order from OTS $0.50 62-11407

Trans. of Radiotekhnika (USSR) 1956, v. 11, no. 7, p. 57-59.
Another trans. is available from LC or SLA mi$1.80, ph$1.80, as SCL-T-287, 8 Dec 59, 5p.

DESCRIPTORS: Targets, *Surface targets, Surface area, Radio waves, Reflection, *Radar reflections, Antennas, Radar antennas, Panoramic scanners, Numerical analysis, Errors.
Remarks are made apropos the erroneous approach, encountered in the literature, to the computation of the effective area of reflection of a surface diffusely-reflecting radiowaves. It is shown that the formulas cited in certain works for the effective area of reflection and the efficiency of the antenna of an aircraft panoramic radar must be made more precise. (Author)

Pomazanov, I. N. and Tikhomirov, P. L.
ON THE DIRECT PRODUCTION OF COLD BECAUSE OF SOLAR ENERGY BY USING SEMICONDUCTORS. [1960] 5p. 4 refs. MDF P-154.
Order from OTS $0.50 62-11502

Trans. of A[kademiya] N[auk] Uzb[ekskoi] SSR [Tashkent]. Izvestiya. [Seriya] Fiz[iko]-Mate[maticheskikh] Nauk, 1960, no. 3, p. 52-55.

DESCRIPTORS: *Semiconductors, *Thermocouples, *Solar energy, *Refrigeration systems, Cooling, Heat transfer, Electronic equipment.

The operating principle of an electronic heat pump (EHP) using semiconducting materials is analyzed. It is possible to obtain a cold-production on the order

10 kl per square meter of EPH cooling surface with a cold efficiency of 5 to 10%, which would guarantee a temperature reduction on the order of $\Delta T_2 = 15^{o}$, under modern technological conditions of the production and technique of using semiconducting substances. Among the advantages of refrigerators operating on the EHP principle are simplicity of the apparatus and exploitation, absence of moving parts and components, absence of liquid and gaseous refrigerants, possibility of using solar energy. (Author)

Popov, V. S.
THERMAL CONVERTERS WITH TWO HEATERS IN ELECTRICAL MEASUREMENT AND ANALOG TECHNIQUE. [1960] 8p. 3 refs. MDF P-155.
Order from OTS $0.50 62-11503

Trans of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Energ[etika] i Avto[matika] 1960, no. 1, p. 138-143.

DESCRIPTORS: *Electric bridges, *Digital computers, Computers, Thermocouples, *Thermoelectricity, Heaters, Phase measurement, Voltage, Analog systems.

Puis, J. du.
LOOPS USING FERRITES. [1961] [20]p. (12 figs. omitted).
Order from SLA $1.60 61-20853

Partial trans. (p. 379-387) of l'Onde Electrique (France) 1955, v. 35 [no. 336/337, p. 379-393].

DESCRIPTORS: *Loop antennas, *Ferrites, Radio equipment, Magnetic materials, Ferromagnetic materials, Ceramic materials, Permeability, Sensitivity, Electric wire.

Rabotnova, T. N. and Konochuk, L. V.
PARAMETERS AND TECHNICAL FEATURES OF PHOTOCELLS WITH TRIALKALI CATHODES. [1961] [9]p. (11 figs. 3 tables omitted) 3 refs. AERDL T-721; RIS E 528.
Order from OTS or SLA $1.10 61-28945

Trans. of Svetotekhnika (USSR) 1959 [v. 5] no. 9, p. 1-7.
Also available from RIS $4.00 as RIS E-528.

DESCRIPTORS: *Photoelectric cells, *Cathodes, Design, Sensitivity, *Alkaline cells, Electrical equipment.

The objects of the present work were to examine methods of making such cathodes, to study the properties of the resulting photocells, and to design a high grade photocell based on that type of cathode. (Author)

Reznik, V. L.
CONCERNING THE REALIZATION OF MONOTONIC FUNCTIONS BY NETWORKS CONSISTING OF FUNCTIONAL ELEMENTS (O Realizatsii Monotonnykh Funktsii Skhemami iz Funktsional'nykh Elementov). 10 Oct 61 [11]p. 6 refs. JPRS: 10433.
Order from OTS or SLA $1.60 61-28862

Trans. of Akademiya Nauk SSSR. Doklady [1961] v. 139, no. 3, p. 566-569.

DESCRIPTORS: Circuits, *Electrical networks, Synthesis, *Functions, Numerical methods and procedures.

The basic problem in synthesizing networks from specified elements consists in constructing the simplest possible schemes that will realize functions of a certain class. We consider the class of monotonic functions. The complexity of systems constructed in this class is evaluated by means of a function $L_M(n)$, the smallest number such that any monotonic function of n arguments may be realized by a system containing not more than $L_M(n)$ elements. As the elements, we take functional elements that realize the conjunction and the disjunction. By applying the results obtained by E. N. Gilbert concerning the number of monotonic functions of n arguments and the theorem of O. B. Lupanov (Akad. Nauk SSSR. Matemat. Inst. Trudy 51: 158-173, 1958; available in translation from OTS $0.75 as 60-11613) on obtaining the lower complexity evaluations of systems, it is not difficult to show that $L_M(n) \geq c_0 2^n/n^{3/2}$. The method proposed makes it possible to lower the upper evaluation to $L_M(n) \leq c_2 2^n \log n/n^{3/2}$. (Author)

Roginskiĭ, V. N.
HET ONTWERPEN VAN SEQUENTIALCIRCUITS MET BEHULP VAN RELAIS (The design of sequential circuits with the aid of relays) tr. by G. B. J. Overbeek. 20p. 6 refs. MTWL: 829. (Text in Dutch).
Order from OTS or ETC $1.85 61-17388

Trans. of: Akademiya Nauk SSSR. Sbornik Nauchnykh Rabot po Provodnoĭ Svyazi (USSR) 1955, no. 4, p. 111-127.

DESCRIPTORS: *Circuits, Relays, Design.

Schonfelder, Helmut.
SIGNAL DISTORTION IN TELEVISION SYSTEMS EMPLOYING AN FM-MODULATED SUBCARRIER. 12 Dec 61, 21p.
Order from SLA $2.60 62-10450

Trans. of Archiv der Elektrischen Übertragung (West Germany) 1961, v. 15, no. 10, p. 273-284.

DESCRIPTORS: Television communication systems, Color television systems, *Video signals, Distortion, Frequency modulation, Modulation

In television systems using frequency-modulated subcarriers, it is expedient for the purpose of calculating the frequency-modulated transient response to approximate the transmission characteristic by an ideal rectangular filter. The analysis for the ideal frequency step for a symmetrical pass-band with constant delay exhibits a symmetrical characteristic. In the applications using subcarrier modulation there is, however, an asymmetrical limitation of the pass band. In this case, it is necessary to first obtain the phase transition of the frequency-modulated output waveform, and from this the frequency step function by graphical differentiation. The asymetrical band limitation results in an asymmetrical characteristic of the frequency-modulated step function. A preshoot occurs which increases with the frequency deviation. Under the conditions prevalent in magnetic recording, the preshoot remains below 7% for a deviation of 1.5 Mc for the video and blanking signal. (Author)

Shirokorad, B. V.
THE ALMOST-PERIODIC REGIME OF A FOUR-DIMENSIONAL AUTOMATIC CONTROL SYSTEM. 17 Aug 61 [18]p. 11 refs. MCL-1254/1.
Order from OTS or SLA $1.60 61-28705

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1960, no. 5, p. 159-165.

DESCRIPTORS: Automatic, *Control systems, Automatic pilots, Rocket trajectories, Topology, Transformations (Mathematics), Theory, Differential equations, Servo systems, Cybernetics, *Nonlinear systems.

The presented theory makes it possible to determine the characteristics of the starting regimes of multi-dimensional non-autonomous control systems with many non-linearities. B. N. Petrov has indicated the importance of studying starting regimes. Topologically derived methods are shown for studying the most important regimes of control systems-recurrent and, in particular, almost-periodic. (Author)

Shishman, D. V.
REACTION ON SURGE DIVERTERS WITH REDUCED BREAKDOWN VOLTAGE DURING INTERNAL OVER-VOLTAGES (Vozdeistviya na Ventil'nye Razryadniki so Snizhennym Probivnym Napryazhaniem pri Vnutrennykh Perenapryazheniyakh) tr. by D. R. H. Phillips. 5 Sep 60 [17]p. (foreign text included) 21 refs. Trafford Park trans. no. 2724 [DSIR LLU] M. 2662.
Order from OTS or SLA $1.60 61-23265

Trans. of #Elektrichestvo (USSR) 1959, no. 12, p. 64-69.

DESCRIPTORS: Electrical equipment, *Electric arcs, *Electric insulation, *Voltage, Electric relays, Electric switches, Electricity, *Pulse generators, *Electrochemistry.

Discussions are presented on over-voltages during disconnection of inductances; over-voltages during disconnection of capacitances; over-voltages during earth faults via an intermittent arc; and over-voltages during resonance and several other abnormal phenomena.

Shtein, Boris Benyaminivich and Chernyak, Nina Abramovna.
SINGLE-SIDEBAND MODULATION USING PHASE NETWORKS. 5 Dec 61 [298]p. 28 refs. JPRS: 11404.
Order from OTS or SLA $18.50 62-13651

Trans. of mono. Odnopolosnaya Modulyatsiya s Pomoshch'yu Fazovykh Skhem, Moscow, 1959, 164p.

DESCRIPTORS: *Sidebands, Separation, *Phase modulation, Modulation, Phase shifters, Frequency, *Electrical networks, Radio communication systems, Telephone communication systems, Communication systems, Radio broadcasting.

The work analyzes a number of methods for shaping a singleband signal with the use of phase-shifting networks. It considers basic possibilities of separating a single sideband and gives a quantitative criterion of suppressing another. It presents in detail the theory of RC and LC wide-band phase-shifting networks and their engineering design. The book introduces considerable experimental material to be utilized for designing systems with phase networks. The second chapter covers general operational principles of multiphase networks, while the third and fourth chapters deal with feasible engineering solutions in radio and wire communications. (Author)

Siforov, V. I.
OVER DE INTERFERENTIESTABILITEIT VAN SYSTEMEN MET CORRECTIECODES (On the interference-stability of systems with correction) tr. by Gerard B. J. Overbeek. 22p. 7 refs. MTWL: 816. (Text in Dutch).
Order from OTS or ETC $1.85 61-17390

Trans. of Radiotekhnika i Elektronika (USSR) 1956, v. 1, no. 2, p. 131-142.

DESCRIPTORS: *Communication systems, *Interference, Stability, Corrections, Coding, Theory.

Taimanov, E.
A METHOD OF PULSE-PHASE AUTOMATIC FREQUENCY CONTROL OF AN OSCILLATOR, 4 Oct 61 [3]p. MCL-1313/1 + 2. AD-265 718
Order from OTS or SLA $1.10 61-28986

Unedited rough draft trans. from Byulleten' Izobretenii (USSR) 1960, no. 16 (USSR [patent appl.] announcement no. 642208/26, 26 Oct 59).

DESCRIPTORS: *Oscillators, Automatic, Frequency, Control, Phase detectors.

A method of pulse-phase automatic frequency control of an oscillator with comparison of the phases on an intermediate frequency is described, differing in that, for the purpose of raising the level of the control voltage and obtaining twice the number of stable frequencies uniformly distributed in a grid, which is

shifted with respect to the harmonics of the reference frequency, the mixer is made in accordance with pulse-phase detector circuit, while a reference pulse signal is fed to the main pulse-phase detector after fourfold division of the frequency.

Tikhodeev, N. N. and Tushnov, A. N.
FLASHOVER VOLTAGES ACROSS WIDE AIR GAPS APPROXIMATING TO OVERHEAD LINE AND SUB-SPACINGS. [1961] [9]p. 2 refs. C. E. Trans. 1891; [DSIR LLU] M. 4011.
Order from OTS or SLA $1.10 61-28184

Trans. of #Elektrichestvo (USSR) 1959, no. 2, p. 6-10.

DESCRIPTORS: Direct current, *Transmission lines, Voltages, Electrical equipment, Transformers, Switches.

Zimmer, W. and Sporleder, I.
NEW INFORMATION ON GALVANIC HARD BRIGHT SILVER PLATING. [1961] [11]p.
Order from SLA $1.60 61-20493

Trans. of Elektrie (Germany) 1960 [v. 14] no. 8, p. 278-281.

DESCRIPTORS: *Silver plating, *Sliding contacts, Hardness, Coatings, Thickness, Electrolytes, Deterioration, Antimony compounds, Conductivity.

An attempt was made to clarify the question whether silver coatings could be produced with greater hardnesses and the least possible deterioration of electrical values by means of organic or inorganic additions to the electrolyte. The experimental investigations showed that all hardeners tested, except antimony in the form of a compound, either gave no satisfactory hardness values or caused decreases in hardness after short times. (hardness loss). Antimony, in the form of potassium antimony tartarate which as the only compound to give good, constant hardness values, has the disadvantage that the electrical conductivity of the silver coating deteriorates to 8 to 10 m/Ω mm^2, which corresponds about to the conductivity of iron. (Author)

Zingerënko, A. M.
BEPALING VAN DE AANGROEIINGSTIJD DER INSCHAKELFUNCTIES UIT DE AMPLITUDE CIRKELFREQUENTIEKARAKTERISTIEK IN VERSCHILLENDE TRANSMISSIESYSTEMEN (Determination of Build-up Delay of Transient Functions for Amplitude-frequency Characterics of Transmission Systems) tr. by E. G. Schultz. 16p. 5 refs. MTWL: 939, (Text in Dutch).
Order from OTS or ETC $1.85 61-17569

Trans. of Radiotekhnika (USSR) 1955, v. 10, no. 7, p. 8-20.

DESCRIPTORS: *Transmission lines, Frequency, Transients, Functions, *Delay circuits, Theory.

Mechanical Engineering

REFRIGERANT CIRCUIT DESIGN IN THE U.S.S.R. DURING THE RECENT MEETINGS OF THE I.I.R. IN MOSCOW SEVERAL PAPERS DEALING WITH THE PROGRESS OF EVAPORATOR DESIGN AND REFRIGERANT CIRCUIT LAYOUT IN THE U.S.S.R. WERE PRESENTED. ABSTRACTS OF THREE OF THOSE PAPERS ARE GIVEN. 5p. MTWL: 916.
Order from OTS or ETC $1.40 61-17592

Repr. from Journal of Refrigeration Nov.-Dec. 1958.

DESCRIPTORS: *Refrigeration systems, Design, *Ammonia, Ware houses, Compressors.

Iordanishvili, E. K. and Stilbans, L. S.
THERMOELECTRIC MICRO-REFRIGERATORS. 18p. 1 ref. AEI T/1043. MTWL: 917.
Order from OTS or ETC $1.85 61-17591

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1956, v. 26, p. 945-957.

DESCRIPTORS: *Refrigeration systems, Thermoelectricity, *Semiconductors, Thermocouples.

Thring, M. W., ed.
PULSATING COMBUSTION: THE COLLECTED WORKS OF F. H. REYNST. Oct 61, approx. 300p.
Order from PP $15.00

Published originally as separate papers in German, French, English and American publications.

DESCRIPTORS: *Gas turbines, Turbines, *Combustion chambers, Coal, Particles, *Combustion, Aircraft, Fuel consumption, Propulsion, Airplane engines, *Boilers, Boiler tubes, Gases, Energy, Air, Steam power plants, Power plants, Boundary layer, Acceleration.

SOVIET SPACE SCIENCE. 16 Nov 61 [15]p.
JPRS: 11154.
Order from OTS or SLA $1.60 62-13553

Trans. of mono. Stantsii v Kosmos: Sbornik Statei (Stations in Space; Collected Articles) Moscow, 1960, p. 214-229.

DESCRIPTORS: *Space flight, Spaceships, Space navigation, *Satellites, *Spaceship cabins, Instrumentation, Temperature, Pressure, Weightlessness, Orbital flight paths, Manned

Contents:
Life in a sputnik, by P. Isakov
Man prior to starting into space, by E. Yugov and A. Serov.

Afans'ev, G. T., Bobolev, V. K., and Bolkhovitinov, L. G.
ESTIMATING THE SENSITIVITY OF EXPLOSIVE SUBSTANCES (MATERIAL). [1961] 7p. (2 figs. omitted) 8 refs.
Order from OTS or SLA $1.10 61-20986

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136, no. 6, p. 1396-1398.
Another trans. is available from OTS or SLA $1.10 as 61-18634 [1961] 8p.

DESCRIPTORS: Explosions, Starting, Test methods, Sensitivity, Pressure, Thermodynamics, *Explosives, Heat transfer.

For abstract see Technical Translations 6: 675, 1961.

Bazykin, V.
THE FIRST SPACE SHIP. 3 Oct 61 [6]p.
MCL-1293/1+ 2. AD-265 709.
Order from OTS or SLA $1.10 61-28973

Unedited rough draft trans. of Kryl'ya Rodiny (USSR) 1960, no. 6, p. 9.

DESCRIPTORS: *Spaceships, Planets, Spaceship cabins, *Satellite vehicles, Space probes, Astronautics, Space medicine, Weightlessness, Re-entry aerodynamics, *Orbital flight paths.

Belyaev, A. F.
THEORY OF DEFLAGRATION OF HIGH EXPLOSIVES, tr. by F. E. Wallwork. June 60 [23]p. 7 refs.
AWRE Trans. U.135; DSIR NLL M. 2370.
Order from OTS or SLA $2.60 61-19116

Trans. of mono. Sbornik Statei Teorii Vzryvchatki, n. p. 1940, p. 21-38.

DESCRIPTORS: *Explosives, *Vaporization, Ignition, Decomposition, Detonation, Explosive gases, Vapor pressure, Temperature.

Gorchakov, E. V.
POSITION OF THE INTERNAL RADIATION ZONE AND THE MAGNETIC FIELD OF THE EARTH. 1961, 4p. 4 refs.
Order from STS $5.80 STS-G6220

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 62-65.

DESCRIPTORS: *Earth, *Magnetic fields, *Satellite vehicles, *Atmosphere.

Melek-Pashaev, N. I.
LIQUID PROPELLANT ENGINES. 1962, approx 125p.
Order from PP $3.50

Trans. of mono. [Zhidkostnyi Reaktivnyi Dvigatel', Moscow, 1959, 141p.].

DESCRIPTORS: *Rocket motors, Rocket fuels, *Liquid rocket propellants, Rocket propellants, Combustion chambers, Exhaust nozzles, Cooling, Fuel systems, Control systems.

Contents:

General layout, basic parameters and fields of application of liquid-propellant engines

Fuels for liquid-propellant engines
The combustion chamber of liquid-propellant engines
Exhaust nozzles of liquid-propellant engines and the processes taking place in them

Characteristics of liquid propellant engines
The cooling of liquid propellant engines
Fuel systems for liquid-propellant engines; Starting the engine and its control.

Parfenov, V.
BREAKTHROUGH INTO SPACE: A SHIP RETURNS TO EARTH. 8 Aug 61 [18]p. MCL-1185/1-2.
Order from OTS or SLA $1.60 61-28703

Unedited rough draft trans. of Znanie-Sila (USSR) 1960 [v. 35] no. 10, p. 1-3.

DESCRIPTORS: *Satellite vehicles, Launching, *Satellite vehicle research, Rocket noses, Refractory materials, *Re-entry aerodynamics, Re-entry vehicles.

Ways are discussed for solving the nose-cone problem.

Popowicz, O.
HET GEDRAG VAN EEN KABEL OP EEN KOEPE-SCHIJF (Behaviour of a wirerope on a Koepe-sheave). 18p. MTWL: 856. (Text in Dutch) (p. 14 in French).
Order from OTS or ETC $1.85 61-17349

Trans. of Archiwum Górnictwa i Hutnictwa (Poland) 1955, v. 3, p. 283-295.

DESCRIPTORS: Mines, Wire and cordage, *Pulleys.

Yarov-Yarovoi, M. S.
THE TRIUMPH OF SOVIET SCIENCE AND TECHNOLOGY [AND] HIGHLY ACCURATE AND RELIABLE AUTOMATIC CONTROLS. 17 Aug 61 [17]p. MCL-1255/1+2.
Order from OTS or SLA $1.10 61-28700

Unedited rough draft trans. of Priroda (USSR) 1960, [v. 49] no. 9, p. 3 and 5.

DESCRIPTORS: *Satellite vehicles, Launching, *Space flight, Re-entry aerodynamics, Re-entry vehicles, Spaceships, Automatic Control.

Sanitation and Safety Engineering

Kishko, Ya. G. and Kharadze, N. M.
ULTRAVIOLET RADIATION: THE EFFECT OF NATURAL ULTRAVIOLET RADIATION ON BACTERIAL AEROPLANKTON OF THE AIR [AND] THE METHODOLOGY OF BACTERIAL CONTROL IN ULTRAVIOLET DISINFECTION OF THE AIR. 16 Aug 61 [12]p. 4 refs. JPRS: 8751.
Order from OTS or SLA $1.60 61-27765

Trans. of Gigiena i Sanitariya (USSR) 1960, v. 25, no. 1, p. 11-15 and 90-93.

DESCRIPTORS: *Ultraviolet radiation, *Radiation effects, Atmosphere, *Bacteria, Control, *Disinfectants, Sanitary engineering.

A reverse dependence has been detected between the intensity of ultraviolet radiation and the number of microorganisms in the atmosphere. When the intensity of ultraviolet radiation increases, the number of pigmented and colorless microorganisms in the bacterial aeroplankton in the atmosphere decreases, but the percentage of sporiferous bacilii, molds, and actinomyces increases accordingly. On overcast days and in fall the effect of ultraviolet radiation on microorganisms in the atmosphere is noticeably weaker. (Author)

Sychevskaya, V. I.
PHENOLOGY OF THE SYNANTHROPIC FLIES OF UZBEKISTAN (O Fenologii Sinantropnykh Mukh Uzbekistana) tr. by M. Slade. [1961] [12]p (foreign text included) 5 refs. [CSIRO] Trans. no. 5454.
Order from OTS or SLA $1.60 61-28635

Trans. of Meditsinskaya Parazitologiya i Parazitarnye Bolezni (USSR) 1960, v. 29, no. 1, p. 66-72.

DESCRIPTORS: *Ecology, *Diptera, *Insect control, Public health.

In all districts of Uzbekistan distinguished by frostless winter months, refuse bins and local lavatories, devoid of central sewerage with their substrate drying up under natural conditions, contain active larvae of the principal fly species almost throughout the year. Isolated accumulations of human excrements constitute in warm seasons breeding places of Musca sorbens, M. domestica and Sarcophaga carnaria. Since the periods during which the larvae can be detected differ for various districts of Uzbekistan, the eradication of larvae in refuse bins, cesspools and lavatories in Termez and Bukhara should be started earlier and terminated later than in Fergana and Urgench. In this respect Samarkand and Tashkent occupy an intermediate position. While Organizing fly control one should take into account meteorological conditions prevalent in the current and the end of the preceeding year, since these determine the phenology of flies. (Author)

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Skrypnik, A.
PERSMETHODE TER SCHEIDING VAN VLEES EN BOT (Otdelenie Myasa ot Kostei Otpressovaniem) (Method at the separation of meat and bone by pressing). 5p. 2 refs. MTWL: 351. (Text in Dutch).
Order from OTS or ETC $1.40 61-17345

Trans. of Myasnaya Industriya (USSR) 1961, v. 32, no. 2, p. 8-9.

DESCRIPTORS: *Meat, Bone, Separation, Pressure.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

MECHANICAL ENGINEERING: SELECTED ARTICLES. 1961, 383p. 161 refs. PL-480 Comm.
Order from OTS $3.75 60-51089

Trans. of Peredovnoi Nauchno-Tekhnicheskii i Proizvodstvennyi Opyt (USSR) 1958, tema 4, no. M-58-64/1; tema 5, no. M-58-43/4; tema 5, no. M-58-179/9; tema 8, no. M-58-6/1, tema 10, no. M-58-231/37; tema 21, no. M-58-283/15; tema 32, no. P-58-5/3; tema 32, no. P-58-33/6; tema 32, no. P-58-61/10; tema 34, no. P-58-80/8; tema 42, no. P-58-57/6.

DESCRIPTORS: *Mechanical engineering, Engineering, Vacuum apparatus, Dilatometers, Powder metallurgy, Sintering, Metal forming presses, Lubricants, Aluminum alloys, Alloys, Sheets, Metals, Electroerosive (Machinery, Fabrications and Accessory Equipment, machining, Machining, Milling machines, Pneumatic devices, Gages, Test equipment, Laboratory equipment, Bearings, Friction, Measurement, Ice, Hardness, Polymers, Mechanical properties, Transducers, Industrial production, Automation, Digital computers, Computers

Contents:
Laboratory press for hot pressing, by A. P. Dubrovskii and S. A. Tsukerman
Vacuum dilatometer for the study of the sintering process of metal powders, by J. J. Kornilov and R. S. Mints
The selection of technical lubricants and equipment for their mechanized application in the hot stamping of aluminum alloys, by E. R. Shor
New developments in the technology of producing aluminum-alloy sheets, by A. I. Kolpashnikov and V. D. Korolev
Precision electro-erosion shaping of metals, by V. M. Grishin and others
Finish milling of large flat surfaces, aimed at elimination of hand scraping, by A. I. Isaev and V. E. Koire
Pneumatic gauges, by O. K. Gorulev
Device for dynamic testing of metals, by Ya. I. Timofeev and L. A. Urantsev
Laboratory device for the measurement of the moments of frictional forces in instrument bearings, by P. L. Gordienko
A device for testing the impact hardness of ice under field conditions, by Kh. N. Dement'ev
A device for studying the characteristics of polymer specimens under tension, by G. A. Lebedev
Heat flow transducers, by O. A. Gerashchenko and V. G. Fedorov
Application of computers and logical operation devices to the automation of production processes in the USSR, by L. I. Shorol'

Debrivnyi, I. and Matveev, E.
MACHINES: UTILITY AND BEAUTY (Mashina Pol'za-Krasota). 10 Oct 61, 6p. JPRS: 10432.
Order from OTS $0.50 61-31651

Trans. from Pravda Ukrainy (USSR) 1961, no. 175, p. 3.

DESCRIPTORS: *Machines, Design, Construction, Colors, Effectiveness, Psychology

Dyachenko, P. E. and Nisnevich, A. I.
ANWENDUNG DER RADIOINDIKATOREN AUF DIE VERSCHLEISSBESTIMMUNG DES KOLBENRINGES (Application of the Radio Indicators on the Analysis of the Wear of the Piston Ring) 10p. 6 refs. MTWL: 909. (text in German).
Order from OTS or ETC $1.55 61-17601

Trans. of Nachrichten des Maschinenbaus (USSR) 1955, no. 7, p. 19-22.

DESCRIPTORS: *Pistons, Rings, Radiographic analysis, *Abrasion.

Engines and Propulsion Systems

Deich, M. E. and Zaryankin, A. E.
AN APPROXIMATE METHOD OF CALCULATING TIP LOSSES (Priblizhennyi Metod Rascheta Kontsevykh Poter'). Dec 61 [9]p. 4 refs. RTS 1973.
Order from OTS or SLA $1.10 62-13744

Trans. of Teploenergetika (USSR) 1958 [v. 5] no. 9, p. 57-60.

DESCRIPTORS: *Turbine blades, Tests, Energy, Pressure, Fluid flow, Turbulent flow, Boundary layer, Turbulent boundary layer, Laminar boundary layer, Numerical analysis.

An approximate method of calculating tip losses in turbine cascades is proposed. Calculated and experimental data are compared. (Author)

Gel'fenbein, L. G.
SELECTION OF EFFICIENT HEATING SURFACES FOR HEAT REGENERATORS OF GAS TURBINE PLANTS. 18 Sep 61 [25]p. 2 refs. MCL-1242/1+2.
Order from OTS or SLA $2.60 62-13061

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1960, no. 1, p. 62-69.

DESCRIPTORS: *Gas turbines, Turbines, Gas turbine regenerators, *Heat exchangers, Surfaces, Heat transfer.

As a result of investigations of efficient designs of heating surfaces for heat regenerators of gas turbine plants a new sheet profile for heating surfaces of heat exchangers was developed, which was constituted of corrugated sheets with fine-grained bulges. Experimental investigations and juxtaposition of various heating surfaces according to their heat yield showed the high efficiency of such heating surfaces. Banks of pipe elements constituted of sheets with the new profile, have a greater strength owing to seam welding along their entire length. This is of value for heat regenerators utilized in gas turbine plants with increased compression ratios. The tests covered a range of Re values from 4,000 to 15,000. (Author)

Klitin, N. P., Nechaev, V. A. and others.
TESTING THE PERFORMANCE OF THE GTU-600-1.5 GAS TURBINE PLATE REGENERATOR. [1961].
Order from FT $13.90 FT-614

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 5, p. 11-17.

DESCRIPTORS: *Gas turbine regenerators, Test methods, Tests

Klyachkin, A. L. and Konshin, I. A.
THE INFLUENCE OF DOUBLE-CONTOUR PARAMETERS ON THE SPECIFIC THRUST AND THE SPECIFIC FUEL CONSUMPTION OF DOUBLE-CONTOUR TURBOJETS. 6 Oct 61 [21]p. 1 ref. FTD-TT-61-44.
Order from OTS or SLA $2.60 61-28970

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1961, no. 3, p. 100-112.

DESCRIPTORS: *Turbojet engines, Operation, Thrust, Fuel consumption, Complex variables, Operational calculus, Nomographs.

Simple formulas are derived for determining the optimum values of the parameters of double-contourness with various methods of mass- and energy-exchange between the contours. Universal nomograms are developed for selecting the calculation values of the parameters of double-contourness for various double-contour turbojets.

Rixmann, W.
THE NSU-WANKEL ENGINE IN THE VEHICLE (Der NSU-Wankel-motor in Fahrzeug). [1961] [6]p. (foreign text included) 1 ref.
Order from SLA $1.10 61-20081

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1961, v. 63, no. 3, p. 88.

DESCRIPTORS: Fuels, Consumption, Combustion, *Internal combustion engines, Transmissions, Torsion bars, Axle shafts

Rozov, Yu. N.
ON THE DYNAMIC OPERATING MODES OF AN ASYNCHRONOUS MOTOR CONTROLLED BY THE SUPPLY VOLTAGE FREQUENCY OF THE MOTOR (Pro Dinamichni Rzhimi Asinkhronnogo Privoda Shcho Upravlyaestya Chastotoyu Naprugi na Dviguni).
17 July 61 [9]p. 3 refs. MCL-1131; AD-262 616.
Order from OTS or SLA $1.10 61-28374

Unedited rough draft trans. of Avtomatyka (USSR) 1960, no. 1, p. 63-68.

DESCRIPTORS: *Electric motors, Operation, Voltage, Frequency, Control systems, Control.

Wiegand, H. and Scheinost, R.
SUBSTITUTION ALLOY STEELS (low Ni - Mo - W STEELS) IN AERO ENGINE CONSTRUCTION. [1961] [10]p. 8 refs.
Order from SLA $1.10 61-18558

Trans. of [Deutsche Luftwacht]: Luftwissen (Germany) 1941, v. 8, no. 10, p. 305-309.

DESCRIPTORS: Substitutes, Alloys, *Steel, Nickel, Molybdenum, Tungsten, Carbides, *Airplane engines.

Manufacturing Equipment and Processes

Beck, E. P.
EXTRUDERS WITH RAPIDLY MOVING SCREWS. [1961] 6p.
Order from SLA $1.10 62-10132

Trans. of Kunststoffe (West Germany) 1956 [v. 46] no. 1, p. 18-20.

DESCRIPTORS: *Metal forming presses, Dies, Machine tools, Castings, *Metal screws, Plastics, Milling machines.

Brungraber, Hannes.
METHOD FOR PRODUCING ABRASIVE BELTS. [1961] 4p.
Order from OTS or SLA $1.10 61-20773

Trans. of German patent application DAS 1,111,386, by Schering AG, filed 27 Nov 58.

DESCRIPTORS: *Belts, *Abrasives, Manufacturing methods, *Binders, *Epoxy resins, Fatty acids, Chemical analysis, Amines, polymers.

The abrasive bodies are bonded with hardenable epoxy resins in the presence of N-containing compounds. As N-containing compounds, reaction products are used that are based mostly on di- or trimeric fatty acids and on excess eliphatic polyamines. A small amount of dicyandiamide can be added.

Krymskii, L. L.
THE FORGING AND STAMPING INDUSTRY IN THE USSR. 3 Oct 61 [42]p. 6 refs. MCL-1299/1+2+3.
Order from OTS or SLA $4.60 62-13175

Unedited rough draft trans. of [Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnykh Znanii. Seriya 4] (USSR) 1959 [no. 9] p. 1-31.

DESCRIPTORS: *Forging, Machine tools, *Metal forming presses, Industrial equipment, Manufacturing methods, Hydraulic presses, Ores, Ball mills

Livshits, A. L.
THE ELECTRO-EROSION MACHINING OF METALS, tr. by E. Bishop. 1960, 126p.
Order from Butterworth Inc., 7235 Wisconsin Ave., Washington, 14, D. C. $5.75

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Metals, *Electroerosive machining, Machining, Automatic, Control, Control systems, Pulse generators, Machine tools.

Transport, Traction and Hoist Facilities

Alekseev, M. V.
UNTERSUCHUNG DER EINWIRKUNG DER ELEKTRO-LOKOMOTIVE WL25 AUF DAS GLEIS (Research of the Action of Electromotic WL25 upon the Rail) 9p. MTWL: 949. (Text in German).
Order from OTS or ETC $1.55 61-17557

Trans. of Vsesoyuznyĭ Nauchno-Issledovatel'skiĭ Institut Zheleznodorozhnogo Transporta. Vestnik (USSR) 1957, v. 16, no. 2, p. 20-23.

DESCRIPTORS: *Railroad tracks, *Locomotives, Electric motors, Mechanical engineering, Measurements.

Chiesa, A.
TOEPASSINGEN VAN ELEKTRONISCHE ANALOGON METHODES BIJ ONDERZOEKINGEN OP AUTOMOBIEL-TECHNISCH GEBIED (Applications of Electronic Analogon Methods at Researches on Automobile-technical Field). 17p. MTWL: 887. (text in Dutch).
Order from OTS or ETC $1.85 61-17617

Trans. of ATA (Italy) 1957, no. 1, p. 75-85.

DESCRIPTORS: Analog systems, *Model tests, *Automotive industry, Electronics.

Coeuillet, M.
THE TRANSPORT OF SOLIDS IN PIPELINES AT COLLIERIES. 1. HYDRAULIC TRANSPORT [Le Transport des Solides en Conduits dans les Houilleres] [1961] 11p. (7 figs. [refs.] omitted)
Order from SLA $1.60 62-10251

Partial trans. of la Technique Moderne (France) 1960, v. 52, no. 6, p. 312-318 (introduction summarized). Another trans. is available from SLA $1.60 as 61-18300 [1961] [17]p.

DESCRIPTORS: *Pneumatic devices, *Hydraulic conduits, *Pipes, Solids, Particles, Coal.

For abstract see Technical Translations 6: 602, 1961.

Grebenyuk, P.
REIBUNGSKOEFFIZIENT DER BREMSKLÖTZE VON SCHMALSPUR-SCHIENENFAHRZEUGEN (Coefficient of Friction of the Brake Block of Smalltrack Rail Vehicle). 5p. MTWL: 951. (Text in German).
Order from OTS or ETC $1.40 61-17555

Trans. of Vsesoyuznyĭ Nauchno-Issledovatel'skiĭ Institut Zheleznodorozhnogo Transporta. Vestnik (USSR) 1957, v. 16, no. 2, p. 55.

DESCRIPTORS: Railroad cars, Vehicle wheels, *Friction brakes.

Holfelder, O.
AUTOMOBILE SHOW NO. 23 PARIS, 1946 (33 Automobil-Salon in Paris 1946). [1961] [10]p. (Foreign text included) 1 ref.
Order from SLA $1.10 62-10316

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1947, v. 49, no. 2, p. 17-18.

DESCRIPTORS: Automotive industry, *Vehicles, *Passenger vehicles, Economics.

The American automobile industry was primarily represented as exhibitors of large luxury cars which far exceeded in length and width of chassis the dimensions of European vehicles. The new chassis with extensively covered wheels and streamlined continuation of the front mudguards over half the vehicle length can be found in all types. These vehicles are prohibitive to the European user on account of their high power and gas consumption values. (Author)

Kleczkowski, A.
DER EINFLUSS DER EINSCHLAGWINKEL DER EINZELNEN KRAFTWAGENRÄDER AUF DIE GRÖSSE DER BEI DER KURVENFAHRT WIRKENDEN KRÄFTE (Influence of the Angle of Lock of the Single Wheels of the Motorcar on the Extent of the Force Working at the Cornering). 47p. MTWL: 932. (Text in German).
Order from OTS or ETC $2.81 61-17576

Trans. of Zeszyty Naukowe Politechniki Krakowskij (Poland) 1956, no. 2, p. 81-

DESCRIPTORS: *Vehicles wheels, Mechanical properties, *Mechanics.

Kovalev, N. A.
FREILAUF DES ZWEIACHSIGEN FAHRZEUGES BEI RUNDKEGELREIBUNG NACH COULOMB ZWISCHEN RAD UND SCHIENE (Free-motion of Biaxial Vehicle at Coulomb level Friction between Wheel and Rail). 14 p. MTWL: 950. (Text in German).
Order from OTS or ETC $1.85 61-17556

Trans. of Vsesoyuznyĭ Zheleznodorozhnogo Transporta. Vestnik (USSR) 1957, v. 16, no. 4, p. 41-45.

DESCRIPTORS: *Railroad cars, *Vehicle wheels, Railroad tracks, *Friction.

Koval'skiĭ, B. S.
TRANSVERSALE SLINGERINGEN VAN EEN LAST BIJ HET VIEREN (Transversal oscillation of a load during the veeringout). 7p. MTWL: 599. (Text in Dutch).
Order from OTS or ETC $1.55 61-17294

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 78, p. 645-647.

DESCRIPTORS: *Hoists, Dynamics, Oscillation.

Melent'ev, L. P. and Golutvina, T. K.
UEBER DIE EINWIRKUNG DER ART DES ROLLENDEN MATERIALS AUF DIE SEITLICHE ABNUTZUNG DER SCHIENEN (The Action of the Kind of the Rolling Material upon the indirect Wearing of the Rails). 12p. MTWL: 947. (Text in German).
Order from OTS or ETC $1.85 61-17559

Trans. of Vsesoyuznyĭ Nauchno-Issledovatelskiĭ Institut Zheleznodorozhnogo Transporta. Vestnik (USSR) 1957, v. 16, no. 4, p. 46-49.

DESCRIPTORS: Railroad cars, Vehicle wheels, *Railroad tracks, *Abrasion.

Nakamura, K.
THE DYNAMIC PROBLEMS OF THE WHEEL AXLES OF RAILWAY VEHICLES. REPORT I. METHOD OF STRESS MEASUREMENT. 25p. 20 refs. MTWL: 952.
Order from OTS or ETC $1.95 61-17554

Trans. of Tetsudo-gijutsu Konyu Shiryo (Japan) 1956, v. 13, p. 289-296.

DESCRIPTORS: *Railroad cars, *Vehicle wheels, Dynamics, Stresses, Measurement.

Pachomov, M. P.
EINWIRKUNG DER ELEKTROLOK AUF DIE STRECKE IM BEREICH DES SCHIENENSTOSSES (Action of the Electro Locomotive upon the Track within Range of the Rail Joint). 15p. MTWL: 948. (Text in German).
Order from OTS or ETC $1.85 61-17558

Trans. of Vsesoyuznyĭ Nauchnolssledovatel'skiĭ Institut Zheleznodorozhnogo Transporta. Vestnik (USSR) 1957, v. 16, no. 4, p. 30-34.

DESCRIPTORS: *Railroad tracks, *Joints, Locomotives, Electric motors, Power.

Pirotto, P. G.
ONDERZOEK NAAR HET GEDRAG VAN DE OPHANGING IN EEN VOERTUIG VOLGENS DE ANALYTISCHE ANALOGON METHODE (Investigation into the Deportment of the Suspension in a Vehicle According to the Analytical Analogon Method) 16p.
MTWL: 888. (text in Dutch).
Order from OTS or ETC $1.85 61-17618

Trans. of ATA (Italy) no. 1, p. 94-103, (1957).

DESCRIPTORS: *Vehicles, *Balances, Mechanical engineering, Analog systems, Model tests.

Skinder, I. B.
BEURTEILUNG DER WIRKSAMKEIT HYDRAULISCHER Kfz-STOSSDÄMPFER (Judgement of the Working of Hydraulic Motorcar-Shock Absorbers). 24p.
MTWL: 931. (Text in German).
Order from OTS or ETC $1.91 61-17577

Trans. of Avtomobil'naya i Traktornaya Promyshlennost' (USSR) 1956, no. 8, p. 16-21.

DESCRIPTORS: *Vibration isolators, Vehicles, *Hydraulic Systems.

Ul'yanov, N. A.
EFFECT OF AIR PRESSURE IN TYRES ON MOBILITY OF EARTH EXCAVATING AND TRANSPORTING TRAILER MACHINES. 12p. 3 refs. MTWL: 942.
Order from OTS or ETC $1.55 61-17566

Trans. of Stroitel'noe i Dorozhnoe Mashinostroenie (USSR) 1957, v. 9, p. 15-18.

DESCRIPTORS: *Earth moving equipment, Trailers, Tire, *Tire tubes, Pressure.

Venediger, H. J.
GERMAN POSTWAR DEVELOPMENT PROBLEMS. [1961] 22p. 11 refs.
Order from SLA $2.60 62-10324

Trans. of ATZ[Automobiltechnische Zeitschrift] (Germany) 1948 [v. 50] no. 1 [p. 4-9].

DESCRIPTORS: *Automotive industry, *Vehicles, *Passenger vehicles, *Motorcycles, Production.

Zeunert, G.
DEVELOPMENT OF THE THREE-WHEEL AUTOMOBILE (Zur Entwicklung des Dreirad-Kraftwagens). [1961] [9]p. (foreign text included) 8 refs.
Order from SLA $1.10 62-10323

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1948, v. 90, no. 4, p. 123-124.

DESCRIPTORS: *Vehicles, *Passenger vehicles, *Vehicle wheels, Cargo vehicles, Design.

After discussing the nonuniform pre-war development of the three-wheel automobile, the present direction of development of the three-wheel truck and three-wheel passenger car is shown by a model of both. (Translator)

MATERIALS

Chechulin, B. B.
THE STATISTICAL THEORY OF BRITTLE FRACTURE
12p. 8 refs. MTWL: 834.
Order from OTS or ETC $1.55 61-17382

Trans. of Zhurnal Tekhnicheskoĭ Khimii (USSR) (1954) v. 24, p. 292-298.

DESCRIPTORS: *Brittle materials, *Fracture, Statistical analysis.

Fusako, A.
PHENOLIC CONSTITUENTS IN PYROLIGNEOUS LIQUOR OBTAINED FROM THE SMOKE OF JAPANESE CHARCOAL KILN tr. by Koki Hara. 10p. 9 refs. MTWL: 957.
Order from OTS or ETC $1,55 61-17549

Trans. of Mokuzai Gakkaishi (Japan) 1959, v. 5, p. 41-44.

DESCRIPTORS: Coal, Combustion, *Smokes, *Phenols, Pyrolysis.

Joisel, A.
CHARACTERISTICS OF STANDARD MORTARS; A COMPARATIVE STUDY OF THE STANDARD MORTARS USED IN THE PRINCIPAL COUNTRIES: [SELECTED PARTS]. [1961] 39p.
Order from SLA $3.60 61-18997

Trans. of unidentified French language mono., n. p., n.d., p. 259-266, 295-303, 407-408.

DESCRIPTORS: *Mortar, Standards, Chemical analysis, Mechanical properties, Concrete

Mikhaĭlov, V. V.
SELBSTSPANNENDER EISENBETON (Auto-stressed re-inforced concrete). 96p. 42 refs. MTWL: 835. (Text in German).
Order from OTS or ETC $2.30. 61-17376

DESCRIPTORS: *Reinforced concrete, Stresses.

Schokbeton, N. V.
APPARATUS FOR INSERTION OF A STRIP OF ELASTIC MATERIAL IN A GROOVE, tr. by F. H. B. 11 Dec 61, 5p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-13885

Trans. of Dutch patent 88,425, cl. 37 d/40 (37 d/33; 37 d/24a; 65a/3c) internat. cl. E 04 f (B63b) appl. 13 Mar 54, appl. pub. 15 Jan 58, patent granted 17 May 58, pub. 16 June 58.

DESCRIPTORS: *Construction materials industry, Concrete, Buildings, Disks, Rotation, Joints, Seals, Expanded plastics, *Elasticity.

Shestoperov, S. V., Lyubimova, T. Yu., and Ivanov, F. M.
DE INVLOED VAN OPPERVLAKTE-ACTIEVE STOFFEN OP DE REACTIE TUSSEN CEMENT EN WATER (Effect of Surface-Active Admixtures on the Reaction Between Cement and Water). 9p. 4 refs. MTWL: 355. (Text in Dutch).
Order from OTS or ETC $1.55 61-17590

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 70. no. 6, p. 1045-1048.

DESCRIPTORS: *Cements, Water, Colloids, Detergents, *Hydrates, *Hydrolysis.

Ceramics and Refractories

Besboroslov, M. S. and Vlazovkii, B. A.
INVESTIGATION OF THE SYSTEM Li_2O-Al_2O_3-B_2O_3-SiO_2 IN GLASSY STATE. 1 Sep 58 [17]p.
Order from OTS or SLA $1.60 61-20693

Trans. of unidentified Russian mono. Minsk, 1957.

DESCRIPTORS: *Glass, Production, Materials, Lithium compounds, Aluminum compounds, Boron compounds, Silicon compounds, Dioxides, Thermal expansion, Refractive index, Oxides.

Areas of glass formation were determined in the system Li_2O-B_2O_3-SiO_2. Glasses resistant to crystallization were found with up to 47 mol-% of Li_2O. With a smaller content of Li_2O it was possible to obtain glass (only opalescent) with a coefficient of linear expansion of 25 to 30 x 10^{-7}. Li_2O reduces viscosity to a greater extent than Na_2O or K_2O. Stable glasses are obtained with compositions of 30 to 50 mol-% Li_2O, 3 to 23 mol-% B_2O_3, and 50 to 70 mol-% SiO_2. The index of refractions is from 1.552 to 1.560. The glasses are stable in relation to acid and water but are easily destroyed by alkaline solutions. An experimental study of the system Li_2O-Al_2O_3-B_2O_3 established the possibility of getting glasses, containing no silica, with Li_2O from 30 to 75 mol-%, and Al_2O_3 from 20 to 70 mol-%. With high contents of Li_2O the glasses are stable against crystallization. Alumino-boro-lithia glasses are possible with coefficients of linear thermal expansion between 63 to 101 x 10^{-7}. There are no glasses with linear thermal expansion below 63 x 10^{-7} in this system. In the system Li_2O-Al_2O_3-B_2O_3-SiO_2 four-component thermally stable glasses can be obtained in a slit furnace that are stable against crystallization and have linear coefficient of thermal expansion of 36.5 x 10^{-7} A high digesting temperature results in very low thermal expansion.

Dietzel, A.
STRUCTURAL CHEMISTRY OF GLASS. 21 May 45, 22p. (7 figs. 1 table omitted) 37 refs.
Order from SLA $2.60 62-10002

Trans. of [die] Naturwissenschaften (Germany) 1941, v. 29, p. 537-547.

DESCRIPTORS: *Glass, Crystal structure, Lattices, Stability, Chemistry

Evstrop'ev, K. K. and [Kharyuzov, V. A.]
CONCERNING THE NATURAL CONDUCTIVITY OF ALKALI-FREE BARIUM-SILICATE GLASS. [1961] 5p. (13 refs. omitted).
Order from OTS or SLA $1.10 61-20676

Trans. of [Akademiya Nauk SSSR. Doklady] 1961, v. 136, no. 1, p. [140-142].

DESCRIPTORS: *Glass, Conductivity, Measurement, Electrochemistry, Mathematical analysis, *Barium, Impurities, *Silicates, Electrical properties, Electrical conductance.

Cast glass, containing 30, 40, and 50 mol-% BaO produced from $BaCO_3$ marked "pure", and sieved sand was melted in a 6-liter quartz crucible at 1550°F in a high frequency furnace. The Electrical conductivity was measured between 350° and 650°C. An increase in specific electrical conductivity was seen with increasing content of BaO in the glass. Coordinated observations of the value of electrical conductivity calculated from fundamental measurements of the diffusion coefficient and actual measurements suggest that the transfer of electricity in non-alkali barium-silicate glass is by ions of barium. It was established that the motion of impurity alkali ions is commensurable with the velocity of movement of barium ions in alkali-free barium silicate glass, but the share of alkali ions in the conduction is not measurable, in view of their low concentration. Carriers of electric current in alkali-free barium silicate glasses show themselves as ions of barium.

Kitaĭgorodskiĭ, I. I.
SCHUIMGLAS (Froth-glass). 7p. MTWL: 900. (text in Dutch).
Order from OTS or ETC $1.55 61-17609

Trans. of Akademiya Nauk SSSR. Doklady, 1940, v. 26, p. 644-646.

DESCRIPTORS: *Porous glass, Production.

Matthijsen, M. J. C.
SINTERED CERAMIC CHISELLING MATERIALS, I AND II. [1961] 22p. 29 refs.
Order from SLA $2.60 61-18407

Trans. of Metaalbewerking (Netherlands) 1958, no. no. 22, p. 452-457 and no. 23, p. 467-470.

DESCRIPTORS: *Ceramic materials, Sintering, *Aluminum compounds, *Oxides, Grains (Metallurgy), Crystals, Mechanical properties, Porosity, Pressure, *Sintered alloys, Cutting tools.

Meerson, G. A., Samsonov, G. V. and others.
VACUUM-THERMAL PRODUCTION OF BORIDES OF REFRACTORY METALS AND THE INVESTIGATION OF SOME BORIDE SYSTEMS (Vakuumnotermicheskoe Poluchenie Boridov Tugoplavkikh Metallov i Issledovanie Nekotorykh Boridnykh Sistem). Dec 61 [18]p. 25 refs RTS 1998.
Order from OTS or SLA $1.60 62-13756

Trans. of Moskovskii Institut Tsvetnykh Metallov i Zolota. Sbornik Nauchnykh Trudov (USSR) 1955, v. 25, p. 209-225.

DESCRIPTORS: *Borides, *Heat resistant alloys *Refractory materials, Metals, Production, Chemical analysis, *Vacuum furnaces, Transition elements, Crystallization, Lattices, Chemical reactions, Carbon Oxides, Carbon black.

The vacuum-thermal process of producing borides of refractory metals by the interaction of the corresponding metal oxides with boron carbide and carbon black according to the equation: $4MeO + B_4C + 3C = 4MeB + 4CO$ enables the production, under relatively simple experimental conditions, of pure borides approximating closely in composition to the compounds denoted by the formulae MeB_2 and Me_2B_5 (for tungsten boride) with only a small residual carbon content, which as a rule does not exceed 0.2%. Microstructural examination, X-ray investigation, and the results for the relation between the rate of etching, microhardness and electrical resistance and the composition of alloys of the TiB_2-ZrB_2, TiB_2-NbB_2 and ZrB_2-TaB_2 systems point to the existence in these alloys of continuous series of solid solutions, which confirms the general rule regarding the formation of such solutions in the carbide-carbide, boride-boride and nitride-nitride systems of metals of the transition elements of the fourth and fifth groups of the Periodic System. (Author)

Singh, U. S.
CONTACT ANGLE: ITS SIGNIFICANCE AND MEASUREMENT. [1961] 11p. 26 refs.
Order from SLA $1.60 62-10094

Trans. of Glas-Email-Keramo-Technik (West Germany) 1959, v. 10, no. 5, p. 165-169.

DESCRIPTORS: *Refractory materials, Surface area, Surface tension, Liquids, Wetting agents, Measurement.

The various roles played by contact angle in the field of refractories are discussed. A review of the literature on contact angle is presented. A description is given of a new method of measuring contact angle, suitable for volatile liquids and molten slags and glasses, provided that the contact angle is less than 90°. (Author)

Sleptsov, V. M. and Samsonov, G. V
BORON NITRIDE (Nitrid Bora). Apr 61 [22]p. 42 refs. RTS 1819.
Order from OTS or SLA $2.60 61-19670

Trans. of Voprosy Poroshkovoi Metallurgii i Prochnosti Materialov (USSR) 1958 [v. 6] p. 65-79.

DESCRIPTORS: *Boron compounds, *Nitrides, Refractory materials.

Trier, W[olfgang].
HEAT FLUX IN GLASS MOLDS (Wärmefluss in Glasformen). [1961] [47]p. (foreign text included).
Order from SLA $4.60 61-20841

Trans. of unidentified German language mono., n.p., n.d.

DESCRIPTORS: *Molding, Molding materials, *Glass, *Heat transfer, Stability, High temperature research, Cooling, Surfaces, Walls, Containers.

Fuels, Lubricants, and Hydraulic Fluids

MONSTERNEMING VAN BRANDLEI (Sampling of Coal Slate) tr. by G.J.M. Fritschy. 11p. MTWL: 895. (text in Dutch).
Order from OTS or ETC $1.55 61-17604

Trans. of Gosudarstvennyĭ Obshchesoyuznyĭ Standart (USSR) no. 2532-44.

DESCRIPTORS: *Coal, *Quality control, Laboratories.

TRANSACTIONS OF THE MOSCOW PETROLEUM INSTITUTE, 1940, VOL. 2: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 24p. 32 refs.
Order from OTS or SLA $2.60 61-20402

Abstract trans. of Moskovskii Neftyanyi Institut. Trudy (USSR) 1940, v. 2, p. 123-128, 181-186, 199-202, 209-215, 217-225, 227-237, 239-243, 245-247, 249-253, 259-270.

DESCRIPTORS: *Petroleum, Abstracting, Lubrication, *Oils, Solvent extraction, Thermal insulation, Evaporation, Fluids, Viscosity, Pipes, Hydraulic systems, Transportation, Water, Pumps, Alkyl radicals, Phenols, Pentenes, *Gasoline, Mixtures, *Hydrocarbons, *Kerosene, *Greases, Chemical properties, Physical properties.

Contents:
Determination of the number of steps in extraction of lubricating oils with selective solvents, by I. L. Gurevich and I. S. Belousova
Use of thermal insulation on tank roofs to decrease the loss of bright oil products from evaporation, by V. S. Yablonskii
Hydraulic impact of viscous fluid on pipe lines, by I. A. Charnyi
Water transport of highly viscous cracked mazuts, by G. M. Grigoryan and T. S. Alekseev
Use of preheaters for highly viscous cracked mazuts, by V. M. Pokrovskii
Pumping of viscous mazuts at low temperatures, by V. Chernikin
Alkylation of phenols. II. Preparation of alkylphenols from pentenes of cracked gasoline, by V. I. Isagulyants and F. F. Machus
Isolation of paraflow from its reaction mixture, by V. I. Isagulyants and O. F. Bogush
Gradual evaporation of a complex mixture of hydrocarbons, by S. N. Obrydchikov
Material balance in cracking of kerosene fractions, by S. N. Obrydchikov and others
New methods of evaluation of the physical and chemical properties of lubricating greases, by D. S. Velikovskii and I. P. Lukashevich.

Ahlers, Walter.
THE OVEN PUSHING SCHEDULE FOR THE COKING OF EXPANDING COAL. [1961] 9p. (figs. omitted).
Order from SLA $1.10 62-10008

Trans. of Glückauf (West Germany) 1959, v. 95, no. 11, p. 701-[705].

DESCRIPTORS: *Coal, Coke, Carbonization, Pressure, Determination, Ovens, Laboratory equipment, Scheduling, Fuels.

Franke, G.
MASS SPECTROMETRIC HYDROCARBON TYPE ANALYSIS OF GASOLINE. I. ANALYSIS OF OLEFIN-FREE PRODUCTS. [1961] 11p. 3 refs.
Order from SLA $1.60 62-10118

Trans. of Erdöl u[nd] Kohle (West Germany) 1960, v. 13, no. 4, p. 263-266.

DESCRIPTORS: *Gasoline, Hydrocarbons, Mass spectroscopy, Spectrographic analysis, Ethylenes, Chemical analysis.

Suitable methods are described for investigating gasolines, which contain no unsaturated compounds, with the mass spectrometer. These methods require a relatively short time to give data on the composition of a gasoline of paraffins, naphthalenes and aromatics. A further breakdown of the aromatics into benzene, toluene, C_8, C_9, etc. aromatics is possible within the course of the calculation. (Author)

Gollmer, Walter.
CONCERNING THE THERMAL TREATMENT OF COAL BRIQUETTES. [1961] [22]p. 12 refs.
Order from SLA $2.60 62-10009

Trans. of Glückauf (West Germany) 1956, v. 92 [no. 11/12] p. 320-328.

DESCRIPTORS: *Coal, Fuels, Temperature, Carbonization, Laboratory furnaces.

Mamedaliev, Yu. G.
ALKYLATION OF AROMATIC HYDROCARBONS. [1961] [44]p. 163 refs.
Order from OTS or SLA $4.60 61-20137

Trans. of mono. The Alkylation Reaction in the Production of Aviation Fuels, Baku, 1945, pt. 1, p. 3-71.

DESCRIPTORS: *Hydrocarbons, Chemical reactions, Production, *Aviation fuels, *Alkyl radicals, Chemical engineering, Sulfuric acid, Catalysts, Fuel oils, Refineries, Benzenes, Gases, Pyrolysis, Gasoline, Kerosene, Octanes, Coal, Coke.

Mamedaliev, Yu. G.
ALKYLATION OF AROMATIC [HYDROCARBONS] (CONTINUATION). [1961] [28]p. 163 refs.
Order from OTS or SLA $2.60 61-20138

Trans. of mono. The Alkylation Reaction in the Production of Aviation Fuels, Baku, 1945, pt. 2, p. 71-102.

DESCRIPTORS: *Alkyl radicals, Benzenes, Butenes, Butadienes, Fractionation, Gases, Pyrolysis, *Aviation fuels, Production, *Hydrocarbons, Reagents, Ethylenes, Catalysts, Octanes, Gasoline.

Mamedaliev, Yu. G.
ALKYLATION OF ISOPARAFFINS. [1961] [36]p. 163 refs.
Order from OTS or SLA $3.60 61-20139

Trans. of mono. The Alkylation Reaction in the Production of Aviation Fuels, Baku, 1945, pt. 3, p. 103-162.

DESCRIPTORS: *Alkyl radicals, *Aviation fuels, Production, Chemical reactions, *Hydrocarbons, Thermodynamics, *Ethylenes, Heat of reaction, Octanes, Gasoline, Antiknock, Sulfuric acid, Fractionation, Esters, Chain reactions.

Pamart, Charles.
STUDY OF CARBONIZATION OF LORRAINE COALS [AT] MARIENAU RESEARCH STATION. [1961] [19]p.
Order from SLA $1.60 61-20943

Trans. of unidentified French language mono. (paper presented before the French Gas Association June 1950).

DESCRIPTORS: *Carbonization, *Coal, Industrial research, Oxidation, Temperature, *Coke, Physical properties, Production, Metallurgy, Blast furnaces

Petrenko, V. G.
MORE RAPID DETERMINATION OF THE TOTAL SULPHUR CONTENT OF SOLID FUEL BY THE COMBUSTION METHOD [Uskorennoe Opredelenie Obshchei Sery v Tverdom Toplive Metodom Szhiganiya]. [1961] [7]p. NCB Trans. A. 1884/SEH; [DSIR NLL] M3280.
Order from OTS or SLA $1.10 62-15263

Trans. of Koks i Khimiya (USSR) 1959, no. 3, p. 14-17.

DESCRIPTORS: *Sulfur, Determination, *Coal, *Coke, *Fuels, *Combustion, Gravimetric analysis.

The procedure of determining total sulphur in coke and coal by combustion at 1150-1200°C in a stream of air and continuous titration with 0.01 N iodine solution is described. It is shown that the results obtained by this method are in good agreement with those obtained by the gravimetric method (GOST 6380-52).

Tsiguro, T.A., Druzhinina, A. V., and Fillipov, B. F.
THE PERFORMANCE OF MOTOR OILS AND OF THE HYDROCARBON GROUPS ISOLATED FROM THEM. 12p. 5 refs. MTWL: 919.
Order from OTS or ETC $1.85 61-17589

Trans. of Khimiya i Tekhnologiya Topliva i Masel (USSR) 1959, no. 2, p. 18-24.

DESCRIPTORS: *Lubrication, *Oils, Hydrocarbons, Combustion.

Vanags, K. Yu.
DE COKESOPBRENGST ALS NIEUWE INDEX VOOR DE KWALITEIT VAN TURF (Yield of coke as a new index of peat quality). 9p. MTWL: 598. (Text in Dutch).
Order from OTS or ETC $1.55 61-17293

Trans. of Torfyanaya Promyshlennost' (USSR) 1951, v. 28, no. 7, p. 23-25.

DESCRIPTORS: *Peat, Coke, Production, Quality control, *Pyrolysis.

Vol'kenau, A. V. and Zvyagin, P. Z.
THE ECONOMIC ASSESSMENT OF COAL LOSSES. [1961] [12]p. NCB Trans. A. 1554/SEH; [DSIR NLL] M3269.
Order from OTS or SLA $1.60 62-15271

Trans. of Ugol' (USSR) 1957 [v. 32] no. 6, p. 8-13.

DESCRIPTORS: *Coal, Mining engineering, Production, Costs.

Leather and Textiles

ON CHEMICAL FIBER QUALITY. Chemistry: USSR no. 27. 13 Oct 61, 5p. JPRS: 10518.
Order from OTS or $0.50 61-31650

Trans. of Khimicheskie Volokna (USSR) 1961, no. 3, p. 1-2.

DESCRIPTORS: Chemistry, Cellulose, Viscosity, Quality control, Production, *Textile industry, *Synthetic fibers, Fibers, *Silk.

The chemical fiber industry has achieved in the first two years of the current seven-year plan high gains by way of introducing new production capacities and of increasing the output of chemical fibers, thus fulfilling the resolution of the May (1958) Plenum of the Central Committee of the CPSU. However, the quality of these fibers, especially the viscose and caproic, have not yet fully attained to the growing demands of the fields of industry which process them into articles. (Extract)

Abramov, S. A.
THE PROCESSES WHICH, BY STABLIZATION, RESULT IN THE CAPRONE FIBRE. [1961] 13p. 8 refs.
Order from OTS or SLA $1.60 61-20704

Trans. of Russian language article from unidentified source [1957].

DESCRIPTORS: Stabilization, Processing, Melting, Moisture, Humidity, Colors, *Threads, *Amides, *Polymers, Production, *Synthetic fibers, Textile industry.

During the stabilization of caprone products the following three processes take place simultaneously in the fibre: a decrease in the period of reaction of internal pressures, which the macromolecules of polyamide synthetic fibres have acquired in the processes of producing fibres and products; the redistribution of the intermolecular structure of polycaprolactam as well as the fixation and strengthening of results; the change of the internal-molecular structure (deformation) of separate macromolecules of polycaprolactam.

Champetier, G.
THE CHEMISTRY OF THE POLYAMIDES. [1961] 12p.
Order from SLA $1.60 61-20711

Trans. of paper from Conference by the M. G. Levi Foundation [held at] Milan Polytechnic Institute [1957 ?].

DESCRIPTORS: Chemistry, *Amides, Polymers, *Textile industry, Mechanical properties, Synthesis, *Synthetic fibers.

Krasyukov, A. F., Boikova, E. P., and Kalita, L. A.
PREPARATION OF A TANNING MATERIAL FROM OIL REFINING WASTE PRODUCTS. [1961] 6p. 2 refs.
Order from OTS or SLA $1.10 61-20119

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1946, v. 19, p. 322-328.

DESCRIPTORS: *Oils, Refineries, *Chemical waste, *Tannic acids, *Leather.

A synthetic tanning material (sulfosyntan) was prepared on a laboratory scale from acid sludge from refining paraffinic oil. The simplicity of its preparation and of the equipment required make this material inexpensive; its quality is not lower than that of sulfoanthracene, which is used in the USSR for tanning. Subsequent strengthening of the adhesion of sulfoparaffin to the hide fibers with the aid of green vitriol improves the chemical and technical characteristics of the leather. The optimal conditions involve a pH of the tanning solution of 3 and a pH value of the ferrous sulfate bath of between 3 and 3.2. (Author)

Orlova, A. V. and Nagdaseva.
CHANGES IN THE MICROSCOPIC STRUCTURE OF POLYETHYLENE TEREPHTHALATE FIBERS DURING HEATING. [1961] 6p. (7 diagr. 3 tables omitted) 3 refs.
Order from OTS or SLA $1.10 61-20877

Trans. of Vysokomolek [ulyarnye] Soed[ineniya] (USSR) 1961, v. 3, no. 7 [p. 953-955].

DESCRIPTORS: *Microstructure, *Ethylenes, *Polymers, *Phthalates, Crystallization, Heating, Elasticity, Temperature, Surfaces, Films, Fibers, *Tires, *Synthetic fibers, *Cordage.

A structural heterogeneity of polyethylene terephthalate fibers is discovered where the basic stem and the surface film react differently towards an elevation of temperature. The rapid crystallization in the isotropic surface film of such a fiber during heating may be the cause of a decrease in elasticity of the fiber while its strength remains unchanged. (Author)

Ulrich, P. and Gallacchi, E.
CONTRIBUTION TO THE MUSHROOM HEAD REACTION AND EXPERIMENTS ON COTTON DYED WITH CIBACRON DYES (Beitrag zur Pilzkopfreaktion und Untersuchungen an mit Cibacron-Farbstoffen Gefärbter Baumwolle) tr. by H. A. G. Nathan. 1961, 14p. 13 refs. NRCC Technical Trans. 990.
Order from NRCC $1.00 NRCC C-3852

Trans. of Textil-Rundschau (Switzerland) 1960, v. 15, no. 11, p. 586-591.

DESCRIPTORS: *Cotton textiles, *Dyes, Dyeing, *Cotton cellulose, Threads, Fibers, Chemical analysis, Chemical reactions

Paints and Finishes

Schmücker, Bernhard.
ECONOMICAL COATING COMPOUNDS FOR FREIGHT CAR LUMBER (Wirtschaftliche Anstrichstoffe fur Guterwagenholzer). [1961] 19p. (9 figs. omitted).
Order from SLA $1.60 61-20940

Trans. of Glasers Annalen (Germany) 1953, v. 77, [no. 1] p. 9-14.

DESCRIPTORS: *Railroad cars, *Coatings, *Paints, *Varnishes, *Railroads, Economics, Steel, *Wood, Preservation, *Refrigerator cars, *Locomotives.

Shishmareva, L. B. and others.
DETERMINATION OF THE OPTIMUM PARAMETERS FOR THE FLOW-COATING PROCESS. 1961, 1200 words.
Order from TTIS $12.00 TTIS-4015

Trans. of Lakokrasochnye Materialy i Ikh Primenenie (USSR) 1961, no. 4, p. 30-34.

DESCRIPTORS: *Coatings, Preparation

Taschow, H. J.
EFFECT OF WATER SOLUBLE ELECTROLYTES ON OIL PAINT FILMS. 1961, 7300 words, 35 refs.
Order from TTIS $45.00 TTIS-2345

Trans. of Plaste und Kautschuk (Germany) 1961, v. 8, Sep, p. 482-486 and Oct, p. 529-531.

DESCRIPTORS: *Electrolytes, Water, Solubility, *Oils, *Paints, *Films

Weber, Hans H.
THE BRIGHTENING AND HIDING POWER OF WHITE PIGMENTS. [1961] 26p. (11 refs. 4 figs. 4 tables omitted).
Order from SLA $2.60 62-10032

Trans. of Farbe und Lack (West Germany) 1960, v. 66, no. 10, p. 560-569.

DESCRIPTORS: *Pigments, Light, Scattering, Mathematical analysis, Brightness, Visibility.

Photographic Materials

DIAZONIUM SALTS SENSITIVE TO VISIBLE RAYS (INCANDESCENT LAMP) AND THEIR CHROMATIC SENSITIZATION (3). [1961] 15p.
Order from SLA $1.60 61-20988

Trans. of an unidentified article, n.p., n.d.

DESCRIPTORS: *Salts, *Toluenes, *Amines, *Methyl radicals, Sensitivity, *Incandescent lamps, *Azo radicals, *Colors, Fibers, Dyes, Stability, Printing, Color photography, *Color film.

The diazonium 2, diazo-3, dimethylamino-toluene salt has a remarkable sensitivity to the incandescent lamp (six times more sensitive than M paper. This is attributed to the ortho-amino substitute. The numerous diazo ortho-aminos prepared by Suss and Werner are generally not very stable. The sensitive diazo in the visible spectrum permit a better reproduction of the colors, particularly of the blues, with incandescent lamps. The outline is also better reproduced, probably because of the softer gradation of the sensitive layer. This is due to the less apparent reproduction of the supporting fibers thanks to the use of a visible ray. A new impression effect was discovered with these diazo. The chromatic sensitization of the diazo by certain dyes takes place only in a uniform environment (film) but not on paper. With certain dyes it is possible to reach to the sensitivity to yellow. A para-amino derivative and notably the diazo-p.-diphenyl-amino-meta-methoxyl has an uncommon sensitivity to the incandescent light. The new diazo were tried in the sensitization of papers. A printing process is elaborated in two colors, utilizing two different diazo, one sensitive to the UV, the other to incandescence and giving the same coupler two different colors. The printings are made with two originals and two sources of light appropriate to the two diazo.

Artyushin, L. F.
NON-LINEAR COLOR-SEPARATION CORRECTION BY MEANS OF INTENSIFYING NEGATIVE MASKS. I. GENERAL DESCRIPTION OF THE PROCESS AND ITS COLOR-SEPARATION TESTS. [1961] 11p. 7 refs.
Order from OTS or SLA $1.60 61-20225

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1959, v. 4, no. 3, p. 202-209.

DESCRIPTORS: *Color film, *Color photography, Dyes, Separation, Colors, Photographic equipment, Photographic film, Photographic filters, Optical images.

The color process with the intensifying negative masks is described. Equations necessary and sufficient for the description of characteristics of color reproduction were derived. These equations are used for determining the optimum sensitometric parameters of non-linear masking. (Author)

Artyushin, L. F.
NON-LINEAR COLOR-SEPARATION CORRECTION BY MEANS OF INTENSIFYING NEGATIVE MASKS. II. CALCULATION OF OPTIMUM PARAMETERS OF THE PROCESS. [1961] 10p. 4 refs.
Order from OTS or SLA $1.10 61-20229

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 2, p. 101-107.

DESCRIPTORS: Dyes, Density, Colors, Separation, Optical images, *Color photography, Color film

If there is no linear dependence of the effective densities upon the amounts of dyes for making the most complete color-separation correction, it is expedient to use non-linear intensifying negative masks. It is recommended that the characteristic curves of masking images which provide an optimum color correction, be plotted according to two saturated chromatic colors and according to one arbitrary color of the achromatic colors of the subject photographed. Formulas for calculating the sensitometric parameters of optimum characteristic curves are given. (Author) (See also 61-20225)

Deichmeister, M. V. and Zhilina, L. D.
SYNTHESIS OF DIMEROCYANINE DYES DERIVED FROM 1,3-DISUBSTITUTED 4-IMIDAZOLIDINONES. [1961] 6p.
Order from ATS $10.65 ATS-07N57R

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel'[skii] Kinofotoinst[itut]. Trudy (USSR) 1960, no. 40, p. 26-33.

DESCRIPTORS: Synthesis *Hydantoins, *Cyanines, *Dyes, Photographic chemicals

Levkoev, I. I., Sveshnikov, N. N. and others.
SOME THIACARBOCYANINES CONTAINING ETHYL OR ISOPROPYL GROUPS IN HETEROCYCLIC RESIDUES. Pt. 14 on Investigations in the Field of Cyanine Dyes. [1961] 8p.
Order from ATS $11.25 ATS-09N57R

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel'[skii] Kinofotoinst[itut] Trudy (USSR) 1960, no. 40, p. 5-11.

DESCRIPTORS: *Cyanines, *Dyes, Ethyl radicals, Propyl radicals, Heterocyclic compounds, Photographic chemicals

Levkoev, I. I. and Durmashkina, V. V.
SOME PROPERTIES OF QUATERNARY SALTS OF 9-METHYLPHENANTHRIDINE. Pt. 16 on Investigations in the Field of Cyanine Dyes. [1961] 5p.
Order from ATS $9.00 ATS-08N57R

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel'[skii] Kinofotoinst[itut] Trudy (USSR) 1960, no. 40, p. 21-25.

DESCRIPTORS: *Cyanines, *Dyes, Salts, Methyl radicals, *Phenanthridines, Photographic chemicals

Novikov, I. A. and Tsyrlina, B. B.
CHANGES IN THE PHOTOGRAPHIC PROPERTIES AND RESOLVING POWER OF VERY FINELY DISPERSED EMULSIONS DURING FINISHING. [1961] 3p. 6 refs.
Order from OTS or SLA $1.10 61-20227

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 218-219.

DESCRIPTORS: *Photographic emulsions, Photographic equipment, Silver compounds, Halides, Photographic chemicals.

Shnirman, G. L.
CERTAIN PROBLEMS ON THE PROGRESS OF TIME LENSES AND PHOTOCHRONOGRAPHS WITH SPECULAR DEVELOPMENT. [1961] 16p. (5 figs. omitted).
Order from OTS or SLA $1.60 61-20875

Trans. of article from an unidentified issue of Uspekhi Nauchnoi Fotografii (USSR) n.d.

DESCRIPTORS: *High speed photography, *Photographic lenses, Rotating mirror cameras, Chronographs, Reflection, Light transmission, Rotating drum cameras, Optical images.

Vilenskii, Yu. B., Chen', Kaun-min and others.
PREVENTING COLOR DISTORTIONS DURING INTERNAL MASKING IN MULTILAYER COLOR FILMS [1961] 5p. 1 ref.
Order from OTS or SLA $1.10 61-20070

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 183-186.

DESCRIPTORS: Color photography, *Color film, Colors, Dyes, Absorption, Photographic emulsions.

It was confirmed that nonlinear distortions occur in masking when the masking and nonmasking couplers, which were used in the form of the mixture, have different reactivities. By adjusting the masking and nonmasking couplers in different emulsion layers and by balancing the effective speed of these layers, it is possible to eliminate the masking distortions introduced by the difference in reactivity. (Author)

Plastics

AIRPLANE IS DRESSED IN GLASS. 21 Sep 61 [2]p. MCL-1381/1+2; AD-265 734.
Order from OTS or SLA $1.10 61-28999

Unedited rough draft trans. of Kryl'ya Rodiny (USSR) 1960, no, 6, p. 30.

DESCRIPTORS: *Glass textiles, *Plastics, Reinforcing materials, Mechanical properties, Aircraft industry, *Aircraft materials.

Plastics reinforced by glass fibers combine lightness and strength. Not without reason it has been called "steel glass." "Glass steel" has caused a revolution in the aviation industry.

Bonvicini, A. and Caldo, L.
MIGRATION OF PLASTICIZERS. [1961] 18p. (5 figs. omitted) 15 refs.
Order from SLA $1.60 62-10006

Trans. of an unidentified article, n.p., n.d.

DESCRIPTORS: *Plasticizers, *Rubber plasticizers, Polymers, Phenolic resins, Manufacturing methods.

Gul, B. E. and Geller, T. [Ya.].
STUDY OF PLASTIC PROPERTIES OF HIGH POLYMERS. [1961] 7p. (5 figs. omitted) 4 refs.
Order from OTS or SLA $1.10 62-10424

Trans. of #[Kolloidnyi Zhurnal] (USSR) 1953, v. 15, no. 2, p. 8-[12].

DESCRIPTORS: *Polymers, *Plastic flow, Deformation, Structures, Mathematical analysis, Molecules, Stresses, Viscosity.

For creating the flow in the stationary stage among other conditions it is necessary to secure the constancy of number of molecules interacting one with the other and being exposed to the given deforming force. The application to the case of linear deformation of high polymers leads to the indispensability to change the deforming stress proportionally to the change of the cross section of the sample, which change results only from the plastic deformation. A method is suggested for the experimental determination of the coefficient of viscosity at constant tension η for such high molecular products, like smoked sheet, with $M = 18_3 \times 10^3$. (Author)

Huttel, Rudolph, Schonthaler, Waldemar, and Muller, Rolf.
ETHYLENE-IMINO-POLYESTER RESINS. [1961] [23]p. (18 tables 4 figs. refs. omitted).
Order from SLA $2.60 62-10031

Trans. of Farbe und Lack (West Germany) 1961, v. 67 no. 2, p. 71-80.

DESCRIPTORS: *Resins, Esters, *Polymers, *Ethylenes, *Imines, Mechanical properties, Chemical properties, Mixtures.

Unsaturated linear polyesters can be converted to ethylene-imino-polyesters through the addition of ethylene-imine and cured by cross-linking through acid or alkylating agents, for example, sulfonic acid ester. The mechanical and chemical properties of a number of such resins are given in dependence of the composition of the polyester. (Author)

Surowiak, W.
EFFECT OF THE PROPERTIES OF THERMOPLASTIC RESINS ON THEIR MOLDING. 27 May 61 [10]p. 10 refs.
Order from SLA $1.10 61-18679

Trans. of Tworzywa-Guma-Lakiery (Poland) 1960, v. 5, no. 1/2, p. 6-9.

DESCRIPTORS: Transition temperature, *Thermosetting resins, *Plastics, *Molding, Mechanical properties, Elasticity

The article describes the structure of amorphous and crystalline-amorphous thermoplastic resins and the changes of the structure caused by temperature variations of the resin. The effect of the structure on the properties of thermoplastic resins and on the molding methods which are dependent upon these properties are discussed. (Author)

Rubber and Elastomers

MASTER MIXTURES WITH A RED CLAY BASE: MASTER MIXTURE 100 TL. [1961] 24p.
Order from SLA $2.60 62-10326

Trans. of unidentified French mono., n.p., n.d.

DESCRIPTORS: *Rubber, *Clays, Mixtures, Vulcanization, Vulcanizates.

The Institute for Rubber Research in Indochina and the French Rubber Institute have developed a master mixture of natural rubber and a red-colored clay. The vulcanization products prepared with the master mixture designated 100 TL possess excellent mechanical properties which enable them to compete with the mixtures prepared with a carbon black base in spite of the fact that the charge is a clay. In the present booklet we have summarized the properties of this master mixture, the interest of which is self-evident. (Author)

Janaček, J.
DE "REPRODUCIBILITEIT" VAN DE RESULTATEN, VASTGESTELD IN DE LABORATORIA VOOR RUBBER-ONDERZOEK (Reproducibility of Results of Tests in the Rubber Laboratory). 17p. MTWL: 920. (Text in Dutch).
Order from OTS or ETC $1.85 61-17588

Trans. of Chemicky Prumysl (Czechoslovakia) 1958, v. 8, p. 494-497.

DESCRIPTORS: *Rubber, Tests, Analysis.

Pumpyanskii, I. M.
REPORT ON THE ALL-UNION CHEMICAL SOCIETY IMENI D. I. MENDELEEV. 18 Dec 61 [10]p. JPRS: 11638.
Order from OTS or SLA $1.10 62-15226

Trans. of #Kauchuk i Rezina (USSR) 1961, v. 20, no.8, p. 55-57.

DESCRIPTORS: Conferences, *Automation, Machines, *Rubber, *Industry, Industrial equipment, Design.

Tarasova, Z. N., Kaplunov, M. Ya. and others.
INTERACTION DU SOUFRE ET DU CAOUTCHOUC NATUREL SOUS L'ACTION DE RAYONNEMENTS IONISANTS (Vzaimodeistvie Sery s Natural'nym Kauchukom Poddeistviem Ioniziruyushchikh Izlucheniya) [Ibteractuib of Sulfur and Natural Rubber by the Action of Ionizing Radiation] tr. by Lichkine. [1961] [18]p. (Russian text included) 7 refs. CEA Trans. no. R 1388 (text in French).
Order from OTS or SLA $1.60 62-13809

Trans. in French of Vysokomolekul[yarnye] Soedin-[eniya] (USSR) 1960, v. 2, no. 8, p. 1201-1206.

DESCRIPTORS: *Sulfur, *Rubber, Chemical reactions, Ionization, *Radiation effects, Vulcanizates, Argon

On a étudié l'influence du soufre sur la cinétique de la structuration sous irradiation du caoutchouc naturel et les propriétés des produits vulcanisés par irradiation. Sous l'action des radiations ionisantes à 25°C, on observe une addition notable de soufre, dont la quantité augmente avec l'augmentation de la dose. Avec l'élévation de température de l'irradiation, la vitesse d'addition du soufre augmente. La présence de soufre diminue la structuration. L'élévation de température pendant l'irradiation de -80 à 100°C produit une intensification de la structuration. Avec du caoutchouc pur, à une température supérieure à 50°C, on observe une réversion du processus de structuration, alors qu'en présence de soufre jusqu'à 100°C, on n'observe pas ce phénomène. Pendant l'irradiation, dans l'argon, du caoutchouc naturel et de ses mélanges avec du soufre, on observe une diminution notable de l'insaturation. Pour les mélanges avec le soufre, cette diminution est moins marquée. Les vulcanisats contenant du soufre, indépendamment des doses d'irraidation jusqu'à 100 megoroentgen, contiennent 40 pour cent de soufre apte à l'échange. (Author)

Wood and Paper

Croon, Ingemar.
THE MORPHOLOGY AND CHEMICAL COMPOSITION OF COMPRESSION WOOD AND TENSION WOOD. [1961] [9]p.
Order from SLA $1.10 61-20041

Trans. of Svensk Pappers-tidning, 1961, v. 64, no. 5, p. 175-179.

DESCRIPTORS: Wood pulp fibers, Chemical analysis, Cellulose, Lignin, Carbohydrates, *Wood, *Trees.

Compression and tension wood are denser and have a greater shrinkage along their lengths than normal wood. Compression wood is formed in softwood on the lower side of the trunk or branches. The colour of the wood is darker and the year rings are wider. The cross-section of the fibre is round with small spaces in the middle lamella and characteristic strips which occur in a vertical section. The fibres are shorter than normal fibres and their tertiary wall is missing. Their chemical composition is characterized by low cellulose high lignin, and high galactose content. Tension wood is formed from hardwood on the upper side of the trunk or branch. It is difficult to distinguish with the naked eye in a trunk crosssection. The fibres are characterized by an inner layer deficient in lignin, the so-called gelatinous layer. It has therefore a low lignin and high cellulose content. The percentage of compression or tension wood is of the greatest importance to the quality of the products made from that wood. (Author)

Gromov, V. S. and Odintsov, P. N.
THE FRACTIONAL COMPOSITION AND PROPERTIES OF LIGNIN OBTAINED FROM HARDWOOD BY THE HYDROTROPIC METHOD (Izuchenie Fraktsionnogo Sostava i Svoitstv Lignina, Vydelennogo iz Listvennoi Drevesiny Gidrotropnym Metodom). 1960, 14p. 20 refs. PL-480 Agr.
Order from OTS $0.50 60-51162

Trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Institut Lesokhozyaistvennykh Problem. Trudy, 1957 [v. 12] p. 91-100.

DESCRIPTORS: *Lignin, Separation, Fractionation, Solubility, Physical properties, Chemical properties, *Wood, Boiling, Precipitation.

Kin, Z.
INVESTIGATIONS ON STARCH RETENTION IN PAPER, ESPECIALLY IN DRAWING CARDBOARD. [1961] 7p. (4 figs. omitted).
Order from SLA $1.10 61-20897

Trans. of Przeglad Papierniczy (Poland) 1960, v. 16, no. 8, p. 225-228.

DESCRIPTORS: *Starches, *Paper, Sizing, *Paper industry

Laboratory tests showed that starch gelatinized in water (in a hot state) is retained by cellulose fibres in quantities not exceeding 3% and almost irrespectively from the amount of starch added based on the weight of the fibres. Starch prepared by this method should not be added into the hollander in quantities greater than 5% by weight. Most suitable is the addition of starch swelled (in a cold state) in a carboxymethylcellulose solution, or of starch swelled (in a cold state) in a solution of NaOH. The high retention degree of starch prepared by this method, as compared with gelatinizing in water, makes possible a considerable reduction of starch admixture for the achievement of the same result.

MATHEMATICS

INFORMATION PROCESSING. [1961] 600p.
Order from Butterworth Inc., 7235 Wisconsin Ave., Washington, 14, D. C. $25.00

Trans. of mono. UNESCO International Conference, 15-20 June 59. Proceedings.

DESCRIPTORS: Conferences, Data, Processing, *Data processing systems, *Digital computers, Computers, Scheduling, *Language, Coding, Programming, *Machine translation, Differential equations, Algebra, Errors, Functions, Polynomials, Matrix algebra, Partial differential equations, Difference equations, Linear equations, Numerical analysis, Numerical methods and procedures.

Berezin, I. S. and Zhikov, N. P.
COMPUTING METHODS, VOL. 1. 1962, approx. 447p.
Order from PP approx. $10.00

Trans. of mono. [Metody Vychislenii, t. 1, Moscow, 1959, 464p.].

DESCRIPTORS: *Mathematics, Textbooks, *Numerical analysis, Errors, Polynomials, Integration, Functions, Least squares method, Theory.

Berezin, I. S. and Zhikov, N. P.
COMPUTING METHODS, VOL. 2. 1962, approx. 533p.
Order from PP approx. $12.50

Trans. of mono. [Metody Vychislenii, t. 2, Moscow, 1959, 620p.].

DESCRIPTORS: *Mathematics, Textbooks, *Numerical analysis, Equation, Algebra, Differential equations, Partial differential equations, Integral equations, Theory.

Pentkovskii, M. V. and Rozhokin, G. K.
EXPERIMENT IN NOMOGRAPH CONSTRUCTION WITH THE "URAL" COMPUTER. 13 Oct 61 9p. 2 refs. JPRS: 10521.
Order from OTS or SLA $1.10 62-13047

Trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Ata]. Vestnik, 1961 [v. 17] no. 5(194) p. 31-36.

DESCRIPTORS: *Digital computers, Computers, Scheduling, *Nomographs, Preparation.

This communication describes the selection of the best nomograph variant with the computation done by the high speed electronic "Ural" calculating machine. The experiment was done on the nomograph of equation $V = \frac{\pi h}{6}(3r^2 + h^2)$ with range, $10.0 \leq r \leq 15.5$; $5.5 \leq h \leq 10.0$; $950 \leq r \leq 4300$. The variable required was V. The frame of the drawing was 230 x 160 mm. Two variants of the nomograph were to be determined: with the least absolute error in the V determination and with the least relative error. (Author)

Petrina, D. Ya.
SOLUTION OF THE INVERSE DIFFRACTION PROBLEM, tr. by Morris D. Friedman. Mar 61 [9]p. 7 refs. AFCRL 157; MDF P-165; AD-255 678.
Order from OTS $0.50 62-11505

Trans. of Ukr[ainskii] Mate[maticheskii] Zh[urnal] (USSR) 1960, v. 12, no. 4, p. 476-479.

DESCRIPTORS: *Diffraction, Wave analysis, Equations

A certain finite domain B with the smooth boundary is assigned in the three-dimensional space E. There is sought the solution of the equations

$$\Delta u + k_1^2 u = 0, \quad \bar{x} \in B,$$

and

$$\Delta u + k_0^2 u = 0, \quad \bar{x} \in E - B,$$

under the following conjugate conditions on the boundary Σ: $(u)_1 = (u)_0$, $\left(\frac{\partial u}{\partial \bar{n}}\right)_1 = \left(\frac{\partial u}{\partial \bar{n}}\right)_0$, where $(\ )_0$ and $(\ )_1$ denote the limiting value on the boundary from within and without, respectively. The numbers k_0 and k_1 are considered to be real. The solution is sought in the form of a sum of incident waves $\exp(ik_0\bar{x})$ ($\bar{k}_0 = \bar{k}_0 \bar{\zeta}$, $\bar{\zeta}$ is the unit vector) and waves which occur as a result of diffraction in the domain B and damp at infinity.

Shreider, Yu. A.
THE DYNAMIC PROGRAMMING PROBLEM AND AUTOMATA. 17 Nov 61 [30]p. 4 refs. JPRS: 11044.
Order from OTS or SLA $2.60 62-13412

Trans. of #Problemy Kibernetiki (USSR) 1961, no. 5, p. 31-48.

Portions of this report will not reproduce well.

DESCRIPTORS: *Automation, *Programming, Numerical methods and procedures, Algebraic topology, Topology, Functional analysis, Games theory, Cybernetics, Digital computers, Computers, Scheduling.

A scheme is proposed which makes it possible to formulate the general problem of dynamic programming, derive the main functional equation, and to establish the principal properties of its solutions. Bellman's results for the case of a determined process are obtained from the scheme as a particular case. This scheme enables one to estimate the region of applicability of the idea of dynamic programming and to rid the main proofs of inessential analytic details. The paper is devoted to the case of a classical situation for a discrete process. At the end of the article a finite-stage process is considered whose functional equation will make it possible to obtain the general relations of the so-called "run-through" (factorization) method for solution of finite-difference equations. A possibility is indicated of using this process in nonlinear equations, to which the run-through method is not directly applicable. (Author)

Computing Devices

Belyaev, Yu. A.
ONE METHOD OF USING TOROIDAL CORES MADE OF FERROMAGNETIC MATERIALS TO CONVERT CONTINUOUS INTO DISCRETE VALUES. 19 Sep 61 [11]p. MCL-1231/1+2; AD-265 696.
Order from OTS or SLA $1.60 62-13073

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1960 [v. 3] no. 12, p. 26-31.

DESCRIPTORS: *Analog-to-digital converters, Magnetic cores, Ferrites, *Ferrite cores, Tests.

The present article shows the possibility of the operation of ferromagnetic toroidal cores as elements converting a varying continuous current value into discrete form. The testing of the pulse characteristics of three types of cores (K-65, K-222 and L-2) showed that K-222 cores possess the best properties. The K-222 cores had an outer diameter of 5 mm, an internal diameter of 3 mm, residual magnetization of 2000 gauss, a coercive force of H = 0.35, and a rectangularity coefficient γ = 90%. Two structural circuits for converters using parallel and series data output are suggested. An experimental unit with parallel output of the output data recorded 33 values of a continuous current varying with a frequency up to 1 cps and ranging from 0 to 1 amp in the form of a binary code.

Kalinina, T. B. and Gol'tsman, F. M.
CALCULATING-MACHINE FOR DETERMINING LINEAR TRANSFORMATIONS OF SIGNALS. 9 Nov 61 [27]p. (1 ref. omitted) 4 refs. JPRS: 10982.
Order from OTS or SLA $2.60 62-13446

Trans. of Prikladnaya Geofizika (USSR) 1960, no. 28, p. 23-34.

Portions of this report will not reproduce well.

DESCRIPTORS: *Digital computers, Computers, Design, Circuits, Tests, Signals, Transformation, Integrals, Statistical functions, Theory.

A device to mechanize the calculation of "convolution" integrals is decribed that was built in the Leningrad branch of All-Union Scientific Research Institute of Geophysical Methods of Prospecting and in the laboratory of dynamics of elastic media of Leningrad University.

Lyubchenko, G. G.
METHOD OF SELECTING LOGICAL OPERATIONS AND MECHANISMS TO EXECUTE THEM IN DIGITAL COMPUTERS. Jan 60 [19]p. 6 refs. AFCRC-TN-60-142; MDF L-130, AD-234 716.
Order from OTS $0.50 62-11497

Trans. of Ukr[ainskiy] Mate[maticheskiy] Zh[urnal] (USSR) 1958, v. 10, no. 4, p. 375-388.

DESCRIPTORS: *Digital computers, Computers, *Computer logic, Mathematical logic, Special functions

Consideration is given to (1) logical operations and logical constants, (2) sets of operations expressing all the logical relations without using logical constants, (3) sets of operations expressing all logical relations by using logical constants, (4) deductions, (5) data and structure of solutions, (6) rationality criteria, (7) three stages of estimates and criteria, (8) scope of the estimates of all 2037 sets, and (9) the mechanization of a collection of statistical data.

Novikov, Yu. V. and Val'denberg, Yu. S.
SPECIALISED ANALOGUE COMPUTORS FOR THE STATISTICAL ANALYSIS OF RANDOM PROCESSES [AND] ON THE PRINCIPLES OF DESIGN OF AN ANALOGUE MATHEMATICAL MACHINE FOR THE SOLUTION OF INTEGRAL EQUATIONS. [1961] [35]p. 10 refs. [DSIR NLL] M 4054.
Order from OTS or SLA $3.60 61-28461

Trans. of Avtomaticheskoe Upravlenie i Vychislitel'naya Tekhnika (USSR) 1958 [v. 1] p. 375-416.

DESCRIPTORS: *Analog computers, Computers, Design, *Statistical analysis, *Statistical processes, *Statistical functions, *Integral equations, Numerical methods and procedures.

MECHANICS

NEWS OF THE ACADEMY OF SCIENCES USSR, OFFICE OF TECHNICAL SCIENCES, MECHANICS AND MACHINE BUILDING, 1960, NO. 6: SELECTED ARTICLES. 14 Dec 61 [23]p. 7 refs. FTD-TT-61-112.
Order from OTS or SLA $2.60 62-15400

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1960, no. 6, p. 38-46 and 109-111.
##Another trans. of p. 109-111 is available from OTS $0.50 as 61-31626, APL/JHU TG-230-T247, 1 Sep 61, 5p.

DESCRIPTORS: Stability, *Laminar boundary-layer, *Fluid flow, Motion, Viscosity, Velocity, Transformations (Mathematics), Mixtures, Sheets, *Gas flow, Boundary layer, Blackbody radiation, Mathematical analysis, Temperature, Turbulence, *Particles

Contents:
On the stability of laminar motion of a fluid containing a heavy admixture, by Yu. P. Gupalo
##Calculation of the radiation flux in a laminar boundary layer, by G. N. Andreev. (For abstract see Technical Translations 7: 155, 1962)

Analysis of pulsating energy stream equilibrium shows that a heavy admixture, even at low concentration, exerts a strong influence on turbulent pulsations in a nonhomogeneous fluid. In certain cases (e.g., during flow in horizontal pipes and channels), suspended particles exert a stabilizing influence; in other cases (e.g., during a downward flow of a nonhomogeneous fluid) the presence of a heavy admixture leads to a more intensive development of turbulent pulsations and early flow turbulence. (See also 61-23311)

Cherkasov, I. I.
OVER HET VERBAND TUSSEN DE COEFFICIENT VAN POISSON EN DE ELASTISCHE EIGENSCHAPPEN VAN EEN MATERIAAL (O svyazi koeffitsienta Puassona s plasticheskimi svoĭstvami materiala) (The relationship between the Poisson coefficient and the plastic properties of substance) tr. by K. Compaan. 9p. 4 refs MTWL: 725. (Text in Dutch).
Order from OTS or ETC $1.55 61-17310

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1952, v. 22, no. 11, p. 1834-1837.

DESCRIPTORS: Materials, *Plasticity.

Fridman, Ya, B., Zilova, T. K., and Zhukova, N. I.
OVER DE INVLOED VAN SCHEUREN OP DE MECHANISCHE EIGENSCHAPPEN VAN EEN MATERIAAL BIJ VERSCHILLENDE SPANNINGSTOESTANDEN. (Effect of cracks on the mechanical properties of a material in various stressed states). 7p. 7 refs. MTWL: 685. (Text in Dutch).
Order from OTS or ETC $1.55 61-17370

Trans. of Akademiya Nauk SSSR. Doklady 1952, v. 84, p. 67-70.

DESCRIPTORS: *Materials, Mechanical properties, Stresses, *Fracture (Mechanics).

Kharlamov, S. A.
ON THE MOVEMENT OF THE GYROSCOPE IN CARDAN'S SUSPENSION WHEN THERE IS A MOMENT ABOUT THE AXIS OF ITS ROTATION [O Dvizhenii Giroskopa v Kardanovoi Podvese pri Nalichii Momenta Vokrug osi Sobstvennogo Vrashcheniya]. 13 Oct 61 [9]p. 5 refs. JPRS: 10520.
Order from OTS or SLA $1.10 62-13046

Trans. from Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 2 [p. 327-330].

DESCRIPTORS: *Gyroscopes, Motion, Rotation, Moments, Inertia, Stability, Mathematical analysis, Differential equations

The equations of the movement of the gyroscope are derived from the generalized principle of D'Alembert. An equation is derived for the maximum angle of deviation of the axis of the figure of the gyroscope under the influence of nutations. (See also 59-14530, 60-11615, 60-13101)

Ruppeneit, K. V.
SAMENDRUKKING VAN EEN CYLINDER TUSSEN TWEE RUWE STARRE PLATEN (Compression of a Cylinder Between two Rough Rigid Plates). 8p. 2 refs. MTWL: 354. (text in Dutch).
Order from OTS or ETC $1.55 61-17597

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 72, no. 2, p. 247-250.

DESCRIPTORS: Cylindrical bodies, Pressure, *Materials, *Plasticity, *Deformation, Theory.

Shorr, B. F.
ON THE DETERMINATION OF THE UNSTEADY CREEP OF NONUNIFORMLY HEATED BARS OF ARBITRARY CROSS SECTION (K Raschetu na Neustanovivshuyusya Polzuchest' Neravnomerno Nagretykh Sterzhnei Proizvol'nogo Poperechnogo Secheniya) [1961] [20]p. 13 refs.
Order from OTS or SLA $1.60 61-20420

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1959, no. 1, p. [89-96].

DESCRIPTORS: *Rods, Creep, Determination, Temperature, Plasticity, Deformation, Stresses, Load distribution

The method of calculation set forth for the elongation and bending of nonuniformly heated bars of arbitrary cross section with unsteady creep, based on the theory of hardening, does not require consideration of the regions of low tension, and is expanded to the case of stresses which change sign with the passing of time, which frequently occurs in connection with greater nonuniformity of the temperature field. (Author)

Sunnunov, N. Z.
THE THEORY OF A DOUBLE GYRO-PENDULUM. 4 Aug 61 [9]p. 5 refs. MCL-1042/1+2; AD-269 620.
Order from OTS or SLA $1.10 61-28698

Unedited rough draft trans. of Akademiya Nauk Uzbekskoi SSR [Tashkent]. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk 1960, no. 4, p. 52-58.

DESCRIPTORS: *Gyroscopes, Theory, Motion, Inertia Resonance, Mechanics

By investigating the motion of the axes of symmetry of the double gyro-pendulum, we have computed the periods of these motions and established the resonance conditions. (Author)

Hydrodynamics, Hydraulics, and Hydrostatics

Karanfilov, T. S.
ON THE ACCURACY OF CALCULATIONS OF SEEPAGE USING THE VISCOUS FLOW MODEL (THE "SLOTTED TROUGH") tr. by G. N. Gibson. July 60 [7]p. 9 refs. Library Communication no. 985; [DSIR NLL M. 2942].
Order from OTS or SLA $1.10 61-15293

Trans. of Gidroteknicheskoe Stroitel'stvo (USSR) 1960, v. 30, no. 2, p. 45-47.

DESCRIPTORS: *Drainage, Viscosity, Fluid flow, Water, Soils, Porosity,

The use of the slotted-trough apparatus for the investigation of seepage is based on the principle of the analogy of the laminar flow of water in a porous medium (soil) with the laminar flow of a viscous liquid in a narrow slot formed by two parallel walls. Comparisons of curves of depression obtained by calculations with the slotted-trough apparatus and with the hydraulic integrator for a two-dimensional diagram showed that they nearly coincide when $L:(H+H_b)>3$, where L is the distance of flow in a given time, H is the height of the water level in the tank above the actual ground -water level, and H_b is the height of the ground-water level over the impervious layer before the structure is built. The heights of ordinates of the curves of depressions obtained by calculations using the hydraulic integrator with a one-dimensional flow diagram do not deviate by more than 3% from the heights obtained by the analytical method.

Mirzadzhanzade, A. Kh. and Abasov, M. T.
APPLICATION OF THE METHOD OF DYNAMIC SIMILARITY IN UNDERGROUND HYDRODYNAMICS. 13p. 19 refs. MTWL: 824.
Order from OTS or ETC $1.55 61-17383

Trans. of Neftyanoe Khozyaĭstvo, (USSR) 1955, v. 33, no. 7, p. 42-50.

DESCRIPTORS: *Hydrodynamics, Underground structures, Analog systems, Theory, *Porous materials.

Narimanov, G. S.
THE MOTION OF A SYMMETRICAL GYROSCOPE, THE CAVITY OF WHICH IS PARTLY FILLED WITH A FLUID (O Dvizhenii Simmetrichnogo Giroskopa, Polost' Kotorogo Chastichno Zapolnena Zhidkost'yu) tr. by J. W. Palmer. 11p. MTWL: 926. RAE Libr. Trans. 787.
Order from OTS or ETC $1.55 61-17582

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21, no. 5, p. 696-700.

DESCRIPTORS: *Gyroscopes, Cavitation, *Fluid flow, Theory.

Polhovski, V.
ELECTRICAL APPARATUS FOR MEASURING VARIABLE HYDRAULIC PRESSURES (Elektricni Uredaj za Merenje Promenljivih Hidraulickih Pritisaka) tr. by Jelena Markovic. 1961 [23]p. 13 refs. PL-480 Int.
Order from OTS $0.50 60-21647

Trans. of [Hidrotehnicki Institut "Inzenjer Jaroslav Cerni"]. Saopstenja. [Transactions] 1955, no. 2, p. 3-14.

DESCRIPTORS: *Electrical equipment, *Measurement, Hydraulic research, *Pressure gauges, *Hydroelectric power systems, Hydrodynamics, Bridges, Temperature, Mechanical engineering, Stresses, Resistance.

The equipment described here is designed for the Institute for Hydraulic Engineering ," Ing. Jaroslav Cerni", in Beograd, as a part of technical equipment for testing water power stations and similar structures . (Author)

Smirnov, N. I. and Polyuta, S. E.
DRUPPELVORMIGE UITSTROMING VAN EEN VLOEISTOF IN EEN ANDERE VLOEISTOF OF IN EEN GAS (Dropping a Liquid into Another Liquid or into a Gas). 14p. 2 refs. MTWL: 353. (Text in Dutch).
Order from OTS or ETC $1.85 61-17580

Trans. of Zhurnal Prikladnoĭ Khimii (USSR) 1948, v. 21, no. 11, p. 1137-1146.

DESCRIPTORS: *Liquids, Gases, *Fluid flow, Processing.

Trebin, F. A. and Efros, D. A.
APPLICATION OF DATA OBTAINED WITH MODELS TO SOME CALCULATIONS OF WELL PRODUCTION. 13p. 2 refs. MTWL: 893.
Order from OTS or ETC $1.85 61-17602

Trans. of Neftyanoe Khozyaĭstvo (USSR) 1955, v. 7, p. 36-42.

DESCRIPTORS: *Mineral oils, Water, *Fluid flow, *Hydraulic models.

METALLURGY

PROBLEMS OF METALLOGRAPHY AND PHYSICS OF METALS: SELECTED ARTICLES. 28 Oct 60 [93]p. 23 refs. MCL-457; AD-257 130.
Order from OTS or SLA $8.60 61-27410

Unedited rough draft trans. of mono. Problemy Metallovedeniya i Fiziki Metallov, n. p., 1959, p. 100-136 and 169-190.

DESCRIPTORS: *Metallurgy, Metals, Crystallization, Ultrasonics, Mechanical properties, Deformation, Steel, Vacuum furnaces, Melting, Casting, Gases, Pressure, Vibration, Castings

Contents:
The action of ultrasonic vibrations on the crystallization of ingots, by V. I. Leont'ev
The effect of elastic vibrations on structure during crystallization, and on mechanical properties and deformability of steels X27 and X25H20, by Ya. B. Gurevich and others
On the question of the effect of vacuum smelting and casting on the properties of metals and quality of ingots, by A. V. Emyashev and others
On the effect of inert gas pressure in the furnace on the content of gases in metal, by A. N. Selevnov and D. S. Kamenetskaya

TITANIUM AND BARIUM. [1961] 2p.
Order from SLA $1.10 62-10457

Abstract trans. of mono. [Gmelin's Handbuch der Anorganischen Chemie, Berlin, 1942] no. 41: Titanium 1951, p. 434-460.

DESCRIPTORS: *Titanium, *Barium, X-ray diffraction analysis, Chemical analysis, Physical properties

Andreev, L. A.
CONTROL OF THE TEMPERATURE OF POURING AND TAPPING OF STEEL AND THE ACCURACY OF MEASUREMENT REQUIRED. 28 Aug 61 [44]p. (3 figs. 6 tables omitted) 51 refs. MCL-1008/1.
Order from OTS or SLA $4.60 62-13168

Unedited rough draft trans. of Metallurgiya: Sbornik Statei (USSR) 1959, v. 2, p. 89-114.

DESCRIPTORS: *Steel, *Thermocouples, Measurement, Instrumentation, Temperature, *Platinum alloys, *Rhodium alloys, *Quality control, Electric wire, Powder metals, Corundum, Manufacturing methods, Melting, Stability, Thermoelectricity, *Iron alloys, Industrial equipment.

To increase the accuracy of thermocouple measurement, it is necessary to employ thermocouples made of alloys of platimum and rhodium of various concentrations. When tungsten-molybdenum thermocouples are employed it is absolutely necessary to take urgent measures to increase the homogeneity of the tungsten and molybdenum wires. A more rigorous system of control of the quality of the wire and electrical measuring instruments has to be developed, so that the thermocouple-measuring instrument system have a possible error not exceeding ±50. Powder metal and heat-resistant corundumstips have to be used instead of quatz.

Arkharov, V. I., Klotsman, S. M., and Timofeev, A. N.
INFLUENCE OF SMALL IMPURITIES ON THE DIFFUSION COEFFICIENTS IN POLYCRYSTALLINE MATERIALS, tr. by S. Klemantaski. 4 July 61 [13]p. 13 refs. FRI Trans. no. 154; [DSIR NLL] M. 4346.
Order from OTS or SLA $1.60 62-13162

Trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1959, v. 4, p. 170-175.

DESCRIPTORS: *Crystals, *Crystal structure, *Crystallization, Structures, Mathematical analysis, *Diffusion, *Impurities, *Beryllium, *Silver, *Copper Solid state physics, *Copper alloys, Alloys.

Small additions of beryllium (0.1%) lead to acceleration of intercrystalline diffusion in polycrystalline copper. The value of the change in the coefficients of diffusion of silver in the copper alloy with 0.1% beryllium depends on the previous treatment changing the distribution of beryllium between the grain and the intercrystalline transition zones. Conclusions have been drawn on the adsorption activity (gorofility) of small additions of beryllium in copper and on the nature of the temperature dependence of the enrichment of intercrystalline transition zones of copper with beryllium. (Author)

Berezhkovskiĭ, D. I.
EEN NIEUWE METHODE TER BEPALING VAN DE SMEEDBAARHEID VAN METALEN (New Method of Determining the Ductility of Metals) tr. by W.R. Filet 6p. MTWL: 959. (Text in Dutch).
Order from OTS or ETC $1.55 61-17547

Trans. of Zovodskaya Laboratoriya (USSR), 1958, v. 24, no. 7, p. 858-860.

DESCRIPTORS: Metals, *Metal forming presses, Tests

Burkard, W. and Gerl, L.
SILICON CONTAINING PASTE FOR METAL POLISHING. [1961] 6p.
Order from SLA $1.10 62-10056

Trans. of Metalloberfläche (West Germany) 1953, v. 5, no. 5, p. B74-B76.

DESCRIPTORS: *Metal polishes, Electrolytic polishing, *Silicon, Carborundum, Grinding wheels, Waxes, Fats, Binders, *Surfaces, Metal powders, Buffers.

Chernov, F. G. and Penzimonzh, I. I.
THE PRACTICE OF HEATING THE REVERBERATORY FURNACES AT THE BALKASH COPPER SMELTING WORKS BY MEANS OF PRECOMBUSTION MUFFLE CHAMBERS (Opyt Razograva Otrazhatel'nykh Pechei pri Pomoshchi Mufel'nykh Predtopkov na Balkhashkom Medeplavil'nom Zavode). Dec 61 [5]p. RTS 1758.

Trans. of Tsvetnye Metally (USSR) 1955, v. 28, no. 4, p. 73.

DESCRIPTORS: *Copper, *Smelting, *Heating plants, *Combustion chambers, Industrial equipment.

Collette, Gaston.
CALORIMETRIC INVESTIGATIONS ON THE KINETICS OF THE ISOTHERMAL BREAKDOWN OF AUSTENITE IN A 12% MANGANESE STEEL. [1961] [20]p. 3 refs.
Order from SLA $1.60 61-18434

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1957, v. 28 [no. 4] p. 229-235 (Max Planck Institut fur Eisenforschung (West Germany). Communication 709).

DESCRIPTORS: *Steel, Chemical analysis, Deformation, *Austenite, Manganese, *Calorimeters, Transformations, Heat, Measurement, Temperature, Grains (Metallurgy), Nuclei, Pearlite.

Davidenkov, N. N.
OPMERKINGEN OVER EEN ARTIKEL VAN V.P. DEGTYAREV, GETITELD: "DE INVLOED VAN VOORSPANNINGEN OP STERKTE EN BROSHEID (Remarks on an Article of V.P. Degtyarev, entitled: "The Influence of Prestressing on Strength and Crispness"). 6p. MTWL: 356. (Text in Dutch).
Order from OTS or ETC $1.55 61-17596

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1949, v. 19, no. 12, p. 1442-1444.

DESCRIPTORS: Metals, *Brittle materials, Stresses, *Temperature.

Diev, N. P., Paduchev, V. V., and Toporova, V. V
REACTION OF IRON SULPHIDES WITH SULPHUR DIOXIDE (Vzaimodeistvie Sul'fidov Zheleza s Sernistym Angidridom). Aug 61 [19]p. 21 refs. RTS 1876.
Order from OTS or SLA $1.60 61-27788

Trans. of Akademiya Nauk SSSR. Ural'skii Filial [Sverdlovsk]. Institut Metallurgii. Trudy, 1958, no. 2, p. 95-105.

DESCRIPTORS: *Iron compounds, *Sulfides, *Sulfur compounds, *Dioxides, Chemical reactions

The action of SO_2 on iron sulphide cannot be described as the reversible reaction $3FeS + 2SO_2 \rightleftharpoons Fe_3O_4 + 2.5\ S_2$, since the equilibrium depends on the amount of troilite present in the system. Pyrrhotite is always found among the solid products, whether FeS is reacted with SO_2 or whether the reverse reaction between Fe_3O_4 and sulphur is allowed to proceed. At temperatures near 900° its composition is close to Fe_7S_8; at higher temperatures it is close to $Fe_{11}S_{12}$.

Glazunov, L. A., Mitrefanov, S. I., and Ratnikova, O. A.
THE OXYGENATED STATE OF PULP DURING SELECTIVE FLOTATION OF LEAD-COPPER-ZINC-PYRITIC ORE (Kislorodnyi Rezhim Pul'py v Protsesse Selektivnoi Flotatsii Svintsova-Medno-Tsinkova-Piritnoi Rudy). Dec 61 [18]p. 4 refs. RTS 1905.
Order from OTS or SLA $1.60 62-13752

Trans. of Tsvetnye Metally (USSR) 1958, v. 31, no. 2, p. 1-6.

DESCRIPTORS: *Lead, *Copper, *Zinc, *Pyrites, *Ores, *Flotation, Oxygen, Determination, Sodium compounds, Sulfides, Oxidation, Reagents, Minerals, Sulfate pulp.

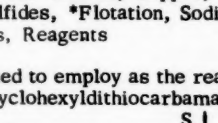
Determination of a pulp oxygen content in the processing at the Belousevskii beneficiation plant for direct selective flotation of lead-copper-zinc-pyritic ore showed that (1) oxygen is absent from the discharge from a mill, and also from the pulp of the main and control flotations of the lead, copper, and zinc processings; (2) too low an oxygen content (from 0 to 4 mg/l) is a result of adding fresh water to the classifier discharge, while a high oxygen content (up to 6 mg/l) is found in the cleaning flotation operations for the lead and copper concentrates; (3) when pulp is aerated in the main and control lead flotations, the amount of oxygen dissolving is approximately equal to the amount of oxygen needed to oxidise the added iron and sodium sulfide; (4) the rate of appearance of free oxygen in the pulp and the rate of oxidation of solid sulfides depend on the presence of organic reagents (collecting agent and frothing agent) in the pulp.

Grebnev, A. N. and Kakovskii, I. A.
METHOD OF FLOTATION OF THE OXIDISED AND SULPHIDE ORES OF NON-FERROUS METALS. Aug 61 [4]p. RTS 1856.
Order from OTS or SLA $1.10 61-27770

Trans. from #Byulleten' Izobretenii (USSR) 1960, (Authors' Certificate no. 125207, cl. Ic, 8_{01}, appl. 13 Apr 59, no. 625007/22).

DESCRIPTORS: *Metals, Copper, Lead, *Ores, Oxygen, Sulfides, *Flotation, Sodium compounds, Carbamates, Reagents

It is proposed to employ as the reagent and collector sodium dicyclohexyldithiocarbamate the formula of which is:



$Na \cdot 3H_2O$ (Author)

Grigorovich, A. N., Shalavina, E. L. and others.
COMBINED EXTRACTION OF CADMIUM, INDIUM, THALLIUM AND ZINC FROM LEAD-SMELTING DUSTS (Kompleksnoe Izvlechenie Kadmiya, Indiya, Talliya i Tsinka iz Pylei Svintsovoi Plavki). Dec 61 [15]p. 10 refs. RTS 1904.
Order from OTS or SLA $1.60 62-13731

Trans. of A[kademiya] N[auk] Kaz[akhskoi] SSR [Alma-Ata]. Inst[itut] Metallurgii i Obogashcheniya. Tr[udy] 1959, v. 1, p. 65-75.

DESCRIPTORS: *Cadmium, *Indium, *Thallium, *Zinc, *Lead, *Smelting, *Particles, Metals, Oxides, Sulfides, Processing, Recovery, *Solvent extraction.

Gumenyuk, V. S. and Lebedev, V. V.
INVESTIGATING HEAT-AND ELECTRO-CONDUCTION OF TUNGSTEN AND GRAPHITE AT HIGH TEMPERATURES (Issledovanie Teplo-i Elektroprovodnosti Vol'frama i Grafita pri Vysokikh Temperaturakh). 29 June 61 [9]p. (2 non-Russian refs. omitted) 3 refs. MCL-1165/1+2. AD-262 622.
Order from OTS or SLA $1.10 61-28237

Unedited rough draft trans. of #Fizika Metallov i Metallovedenie (USSR) 1961, v. 11, no. 1, p. 29-33.

DESCRIPTORS: *Thermal conductivity, Conductivity, *Tungsten, *Graphite, Heat transfer.

The described installation allows to determine in an independent way, in one and the very same conditions with sufficient degree of accuracy the heat and elcyroconduction of metals and alloys on a wide range of temperatures. The heat conduction coefficients of tungsten and graphite decrease with the rise in temperature, and their progression is well described by curves of the second magnitude over the entire investigated range. The Lorentz number for tungsten in the range of temperatures of 900-2200°C are above the theoretical value and depends loosely upon temperature. (Author)

Kalivoda, Ales.
DETERMINATION OF THE COEFFICIENT OF ACTIVITY ON CARBON IN ALLOYED FERRITE. [1961] 8p. (7 footnotes omitted).
Order from SLA $1.10 62-10333

Trans. of Hutnicke Listy (Czechoslovakia) 1960, v. 15, no. 9, p. 687-689.

DESCRIPTORS: *Ferrites, Carbides, *Steel, Alloys, *Carbon, *Activity coefficient, Determination, Silicon, Nickel, Manganese, Chromium.

On the basis of the Hillert's formula:

$$\frac{a_c \text{ cementite + alpha}}{a_c \text{ pure cementite + alpha}} = -y(4F - 3),$$

with the help of an analytical determination of the alloying elements in the ferrite and carbides, activity coefficiens were determined for carbon in steels alloyed with silicon, nickel, manganese and chromium. The manganese and especially chromium decrease very significantly the activity of carbon in comparison with that in the pure alloy Fe-C, which means that the presence of these elements decreases the quantity of "free" carbon capable of reaction. The nickel has no practical effect on the activity of the carbon in comparison with that in an Fe-C alloy and consequently its influence on the carbide reaction is insignificant. Si, however, increases the activity of carbon (C) at a given content by about 18% and it can then act significantly on the carbide reaction. (Author)

Klotsman, S. M. and Orlov, A. N.
ON THE MECHANISM OF DIFFUSION ALONG GRAIN BOUNDARIES, tr. by S. Klemantaski. 22 June 61 [13]p. 9 refs. FRI Trans. no. 152; [DSIR NLL] M. 4345.
Order from OTS or SLA $1.60 62-13161

Trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1959, v. 4, p. 90-95.

DESCRIPTORS: *Grains (Metallurgy), *Boundary layer, *Diffusion, Structures, Mathematical analysis, Solid state physics.

Levina, S. D. and Burshtein, R. Kh.
OXYDE-LAAGJES OP HOOGGELEGEERDE STAAL-SOORTEN (Oxide layers on highly alloyed steels) tr. by J. H. van Santen, 11p. (foreign text included). 11 refs. MTWL: 710. (Text in Dutch).
Order from OTS or ETC $1.55 61-17333

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1952, v. 26, no. 4, p. 555-559.

DESCRIPTORS: *Steel, Alloys, *Oxides, Chromium alloys, Nickel alloys.

Muramatsu, Koji.
AN APPARATUS FOR VACUUM FUSION ANALYSIS. [1961] [12]p. 7 refs.
Order from SLA $1.60 61-20848

Trans. of Toshiba Rev[iew] (Japan) 1956, v. 11, no. 12, p. 1349-1356.
Another trans. is available from ATS $22.75 as ATS-57N53J [1961] 12p.

DESCRIPTORS: *Vacuum apparatus, *Vacuum furnaces, Design, Construction, Operation, *Metallurgy, Metals, Gases, Impurities, Determination, Heat of fusion, Microanalysis

A new apparatus has been constructed for analysis in the study of vacuum metallurgy. In the apparatus is employed a Guldner-Beach-type furnace improved to be used with more ease and higher accuracy. The blank in micro gas analysis can usually be lowered to about 0.05 micron-litre per minute, so that the oxygen content in usual metals, in the range down to 10^{-4} percent, is easily determined. The gases evolved from specimens of solid state are also measured and analyzed by the apparatus. A few examples of gas analysis and gas evolutions are shown herein in addition to the description of the construction and function of the apparatus. (Author)

Nosov, A. V. and Bykov, D. V.
WORKING METALS BY ELECTRO-SPARKING. 72p. 14 refs. MTWL: 843.
Order from OTS or ETC $3.35 61-17365

Abridged trans. of mono. Elektroiskrovaya Obrabotka Metallov. 1952.

DESCRIPTORS: *Spark machining.

Orlov, B. D., Shavyrin, V. N., and Novosel'tsev, N. A.
X-RAY INSPECTION OF SPOT-WELDED ASSEMBLIES OF HIGH-STRENGTH ALUMINUM ALLOYS (Rentgenovskii Kontrol'uzlev iz Vysokoprochnykh Alyuminievykh Splavov, Svarivaemykh Techkami). Dec 61 [16]p. 8 refs. RTS 1977.
Order from OTS or SLA $1.60 62-13597

Trans. of Svarochnoe Proizvodstvo (USSR) 1957, no. 1, p. 20-24.

DESCRIPTORS: *Aluminum alloys, Mechanical properties, *Spot welding, *Spot welds, *Welded joints, X-rays, *Non-destructive testing, *Aircraft industry, Manufacturing methods.

Plaksin, I. N. and Bessonov, S. V.
ABSORPTION OF OXYGEN IN SULPHIDE SUSPENSIONS (Pogloshchenie Kisloroda v Sul'fidnykh Suspenziyakh). Dec 61 [5]p. 1 ref. RTS 1931.
Order from OTS or SLA $1.10 62-13916

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 98, no. 2, p. 251-252.

DESCRIPTORS: *Sulfides, *Solutions, *Oxygen, *Absorption, Pyrites, Minerals, Flotation

Experiments show that oxygen is absorbed by the sulfides to a significant extent even when the sulfide pulp is considerably diluted. The oxygen is absorbed by pyrites and galena principally at the first instant of contact, whereas chalcopyrite absorbs the oxygen gradually. These peculiarities of the minerals with regard to the action of oxygen agree with the influence of the aggregating agent on their floatability. Exceptionally large absorption of oxygen by pyrites was noted.

Plaksin, I. N. and Shafeev, P. Sh.
EFFECT OF ELECTRICAL POTENTIAL UPON THE DISTRIBUTION OF XANTHATES ON THE SURFACE OF SULFIDES (O Vliyanii Elektricheskogo Potentsials na Raspredelenie Ksantogenatov na Poverkhn sti Sul'fidov). Dec 61 [5]p. 7 refs. RTS 1929.
Order from OTS or SLA $1.10 62-13599

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 118, no. 3, p. 546-548.
Another trans. is available from CB $5.00.

DESCRIPTORS: *Xanthic acids, Distribution, *Sulfides, Surfaces, *Electric potential, Effectiveness, Chemistry.

Polin, I. V.
PECULIARITIES OF THE COMBUSTION OF THE ELECTRIC ARC IN VACUUM ARC FURNACES. 28 Aug 61 [61]p. (21 figs. 4 tables) 16 refs. MCL-1009/1. AD-265 666.
Order from OTS or SLA $6.60 61-28990

Unedited rough draft trans. of Metallurgiya: Sbornik Statei (USSR) 1959, v. 2, p. 188-220.

DESCRIPTORS: *Vacuum furnaces, *Electric arcs, Combustion, Electric discharges, Metals, Alloys, Melting.

Polin, I. V. and Kozlovich, Yu. I.
TECHNOLOGY OF PRODUCTION AND MELTING OF EXTRUDED AND BRIQUETTED ELECTRODES FOR MELTING TITANIUM ALLOYS. 28 Aug 61 [28]p. (14 figs. 3 tables omitted). MCL-1010. AD-267 735
Order from OTS or SLA $2.60 62-15182

Unedited rough draft trans. of Metallurgiya: Sbornik Statei (USSR) 1959, v. 2, p. 221-235.

DESCRIPTORS: *Titanium alloys, Melting, Industrial production, Extrusion, Electrodes, Metal forming presses, Contamination, Impurities, Specifications, Alloys.

Shcheveleva, A. S.
FROTH FLOTATION OF LEAD-BEARING OXIDE MINERALS OF COMPLEX COMPOSITION (Flotatsiya Okislennykh Svintsovykh Mineralov Slozhnogo Sostava). Dec 61 [13]p. 6 refs. RTS 1865.
Order from OTS or SLA $1.60 62-13728

Trans. of mono. Voprosy Tekhnologii Dobyvaniya i Obogashcheniya Poleznykh Iskopaemykh, Moscow, 1959, p. 147-156.

DESCRIPTORS: *Lead compounds, *Oxides, *Minerals, Chemical analysis, Flotation, Froth baths, Manufacturing methods.

The investigation was carried out with cerussite, anglesite, wulfenite, pyromorphite, mimetesite, beudantite, vanadinite, and plumbojarosite. All the minerals except plumbojarosite react with sodium sulfide. With increasing time of sulfidizing there is first an improvement in the flotation characteristics, shown by a reduction in the time of adhesion, which reaches a minimum after different times of treatment for differen minerals. Prolonged contact with the sodium sulfide solution has an adverse effect on floatability only in the cases of cerussite and anglesite, with which the time of adhesion increases with increasing time of contact, indicating more or less marked development of hydrophilic properties by the surface. As regards rate of sulfide formation, the minerals can be arranged in the following order of decreasing floatability: cerussite, anglesite, wulfenite, vanadinite, pyromorphite, mimetesite, beudantite, plumbojarosite.

Sviderskaya, Z. A., Drits, M. E., and Vashchenko, A. A.
INFLUENCE OF COLD DEFORMATION OF THE PROPERTIES OF ALLOYS OF THE SYSTEM Al-Cu AND Al-Cu-Mg IN THE ARTIFICIALLY AGED STATE, tr. by S. S. Klemanstaki. 16 May 61 [9]p. 8 refs. FRI Trans. no. 151; [DSIR NLL] M. 4344.
Order from OTS or SLA $1.10 62-13160

Trans. of Izvest[iya] Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1959 [v. 2] no. 6, p. 158-161.

DESCRIPTORS: *Aluminum alloys, *Copper alloys, *Magnesium alloys, *Deformation, *Age factors, Alloys.

Alloys of aluminum containing the S phase (Al_2CuMg) are more sensitive to the action of heat treatment preceding ageing than are alloys of the binary system Al-Cu. This is particularly evident from a comparison of the increase in the yield point and the fall in elongation of the indicated groups of alloys.

Urt'ev, V. P. and Maksimov, B. M.
METHOD OF MELTING ALLOYING ELEMENTS FOR TITANIUM ALLOYS. 28 Aug 61 [37]p. (7 figs. 4 tables omitted) 6 refs. MCL-1012/1; AD-265 669.
Order from OTS or SLA $3.60 62-13063

Unedited rough draft trans. of Metallurgiya: Sbornik Statei (USSR) 1959, v. 2, p. 251-268.

DESCRIPTORS: *Titanium alloys, *Melting, Electric arc, Vacuum furnaces, Electrodes, Heating, Additives, Chemical analysis, Molding, Temperature, *Aluminum alloys, Tin, Alloys.

The method developed to melt alloying additions with refractory components in a vacuum induction furnace in which the solution of the refractory component in the melt is performed with this component suspended makes it possible to run the heat and the pouring of the alloying addition with minimal superheat. This helps to produce high-grade master alloys with good uniformity of chemical composition in high yield and with minimum losses of expensive alloying elements (Ta, Nb, Mo, etc.). As a consequence of an investigation of the effect of the composition of the aluminothermic mixture upon the temperature of aluminothermic reaction, the permissible limits of addition to the aluminothermic mixture to assure a quite reduction reaction and a diminution of losses of alloying element from 25 to 5% during the heat, were determined. A technology for melting in a lined corundum crucible, with the molten metal tapped into an iron ingot mold was developed. This, along with the temperature regime, assures a low silicon content as well as a uniform composition of the alloying elements produced. This makes it possible to refrain from remelting in induction furnaces in order to bring about more uniform composition. A technology for melting Ti-Al and Ti-Sn alloying additions in vacuum arc furnace with nonconsummable electrode was developed. This technology makes it possible to melt alloys of titanium containing much aluminum and tin. (Author)

Vasenin, F. I. and Konovalov, P. F.
HET IONISATIE RONTGENONDERZOEK VAN TELLURIDE BISMUTH (An Ionization X-ray Investigation of the Structure of Bismuth Telluride) tr. by G.B.J.Overbeek. 12p. 13 refs. MTWL: 914. (Text in Dutch).
Order from OTS or ETC $1.85 61-17594

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1956, v. 26, no. 7, p. 1406-1414.

DESCRIPTORS: *Bismuth alloys, *Tellurium alloys, Ionization, X-ray diffraction analysis, *Crystal structure, *Thermo electricity.

Vasenin, F. I.
DE THERMO-ELECTRISCHE EIGENSCHAPPEN VAN DE ALLIAGES VAN HET BISMUTH-TELLUUR-SYSTEEM (Thermo-electric properties of the Alloys of the Bismuth-tellure System) tr. by G.B.J.Overbeek. 9p. 4 refs. MTWL: 915. (Text in Dutch).
Order from OTS or ETC $1.55 61-17593

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1955, v. 25, no. 3,

DESCRIPTORS: *Tellurium alloys, *Bismuth alloys, *Thermoelectricity.

Vlasov, A. P. and Savinkov, K. P.
HIGH-FREQUENCY METAL SPRAYING. 20 Oct 61, 5p. AID Rept. 61-145.; AD-266 483.
Order from OTS or SLA $1.10 62-13283

Abstract trans. of mono. Vysokochastotnaya Metallizatsiya, Moscow, 1960, 121p.

DESCRIPTORS: *Metal coatings, Chemical analysis, Physical properties, Mechanical properties, High frequency, Electric currents, Induction heating.

The use of high-frequency current makes it possible to heat certain specific metal wires at an optimal rate so that metal coatings of desired chemical composition and improved physical and mechanical properties can be obtained.

Zamotorin, M. I.
JOINT SOLUBILITY OF MAGNESIUM AND ZINC IN ALUMINIUM IN THE SOLID STATE, tr. by S. Klementaski. 9 June 61 [12]p. 11 refs. FRI Trans. no. 158; [DSIR NLL] M. 4352.
Order from OTS or SLA $1.60 62-13163

Trans. of Politekhn[icheskii] Inst[itut] Leningrad. Trudy (USSR) 1955, no. 180, p. 38-43.

DESCRIPTORS: Solid state physics, *Aluminum, *Zinc, *Magnesium, *Solubility, Atomic structure, Fluidized solids, Chemical reactions, Chemical analysis, Chemical equilibrium.

The data obtained show that the solubility isotherms are not in the form of smooth curves with a minimum, as would follow from Hume-Rothery's ideas. On the polythermal saturation curve and on solubility isotherms relative solubility maxima are found, which are produced by chemical reaction of atoms, inherent in compounds, existing in equilibrium with the solid solution. According to the phase diagram the aluminium solid solution in the given system is in equilibrium with the binary compound $MgZn_2$ and $MgZn_5$ and with a ternary compound, the T phase.

Zamotorin, M. I.
SOLUBILITY OF COPPER AND MAGNESIUM IN ALUMINIUM IN THE SOLID STATE AT DIFFERENT TEMPERATURES, tr. by S. Klemantaski. 31 May 61 [13]p. 12 refs. FRI Trans. no. 157; [DSIR NLL] M. 4354.
Order from OTS or SLA $1.60 62-13164

Trans. of Politekhn[icheskii] Inst[itut] Leningrad. Trudy (USSR) 1955, no. 180, p. 32-37.

DESCRIPTORS: Solid state physics, *Aluminum alloys, *Magnesium alloys, *Copper alloys, *Solubility, Fluidized solids, Atomic structure, Chemical analysis, Chemical bonds, Chemical reactions, Phase studies, *Transition temperature.

The chemical interaction between atoms of the solvent and dissolved components is accompanied by geometrical transformations of the volume of the solid solution with the formation of spatial cusps. (Author)

THE SOFT NITRIDING OF CAST IRON (Das Weichnitrieren von Gusseisen). [1961] [5]p. (foreign text included).
Order from SLA $1.10 62-10216

Trans. of Giessereipraxis (Germany) 1959 [v. 77] no. 8, p. 145.

DESCRIPTORS: *Cast iron, *Hardening, *Nitrogen, Chemical reactions, Manufacturing methods, *Cyanates

Arbuzov, M. P.
DE TOESTAND VAN ELECTROLYTISCH UIT AFGESCHRIKT STAAL AFGESCHEIDEN MARTENSIET (Structure of martensite electrolytically separated from quenched steel) tr. by J. H. van Santen. 8p. 4 refs. MTWL: 701. (Text in Dutch).
Order from OTS or ETC $1.55 61-17324

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 74, no. 6, p. 1085-1087.

DESCRIPTORS: *Martensite, Steel, Hardening, Electrolytic polishing.

Gridnev, V. N.
HET PROBLEEM VAN HET MECHANISME EN DE KINETICA VAN DE OMZETTING VAN PERLIET IN AUSTENIET BIJ HOGE VERWARMINGSSNELHEDEN (The problem of the mechanism and the kinetics of the transformation of perlite into austenite at high velocities of heating) tr. by J. H. van Santen. 18p. (foreign text included). 10 refs. MTWL: 705. (Text in Dutch).
Order from OTS or ETC $1.85 61-17328

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) (1951) v. 21, no. 4, p. 473-481.

DESCRIPTORS: Steel, *Austenite, *Pearlite, Phase transitions, Heating.

Iofa, Z. A. and Lyakhovetskaya, E. I.
HET MECHANISME VAN DE WERKING VAN INHIBITOREN OP DE WATERSTOFBROSHEID VAN STAAL IN ZWAVELZUUR (The effect of inhibitorson the hydrogen brittlenes of steel in sulfuric acid)tr.by J. H. van Santen. 9p. 11 refs. MTWL: 721. (Text in Dutch).
Order from OTS or ETC $1.55 61-17306

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 86, no. 3, p. 577-580.

DESCRIPTORS: Sulfuric acid, Brittle materials, Hydrogen, *Steel, Catalysts.

Kurdyumov, G. V. and Perkas, M. D.
OVER DE CARBIDEVORMING IN GELEGEERDE STALEN BIJ HOGE ONTLATINGSTEMPERATUUR (Formation of carbide in the alloy steel during tempering at higher temperatures) tr. by K. Compaan. 7p. 7 refs. MTWL: 723. (Text in Dutch).
Order from OTS or ETC $1.55 61-17308

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 87, p. 41-43.

DESCRIPTORS: *Carbides, *Steel, High temperature research.

Maksimova, O. P. and Nikonorova, A. I.
HET PROBLEEM VAN DE INVLOED VAN EEN DEFORMATIE OP DE KINETICA DER MARTENSIET OVERGANG (Effect of deformation on the kinetics of martensitic transformation) tr. by J. H. van Santen. 8p. (foreign text included) 1 ref. MTWL: 702. (Text in Dutch).
Order from OTS or ETC $1.55 61-17325

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 81, no. 2, p. 183-186.

DESCRIPTORS: *Martensite, Phase transition, Deformation.

Rozin, K. M. and Finkelshteĭn, B. N.
ONDERZOEK VAN PHASEOVERGANGEN VOLGENS DE METHODE DER INWENDIGE WRIJVING (Izuchenie fazovykh prevrashcheniĭ metodom vnutrennego treniya) (Study of phase transformations by the internal-friction method) tr. by K. Compaan. 6p. (foreign text included) 2 refs. MTWL: 716 (Text in Dutch).
Order from OTS or ETC $1.55 61-17319

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 91, no. 4, p. 811-812.

DESCRIPTORS: *Steel, Phase transitions, Austenite, Friction.

Schultebraucks, Friedrich.
ANNEALING INSTALLATION WITH ROTARY FURNACE, tr. by F. H. B. 13 Dec 61, 6p. (3 figs. omitted).
Order from OTS or SLA $1.10 62-13871

Trans. of German printed patent application (patentanmeldung) B 31,215 VI/18 C, cl. 18 c, gr. 8/90, by Brown, Boveri & Cie, Aktiengesellschaft, appl. filed 29 May 54, pub. 2 Feb 56.

DESCRIPTORS: *Rotary furnaces, Installation, Annealing, Heat, Recovery, Economics, Industrial equipment, Induction heating, Iron industry.

Schwarz, Gerhard and Junghans, Dieter.
CHILLED GRAY IRON CASTINGS (Kokillengrauguss) [1961] [39]p. (foreign text included) 3 refs.
Order from SLA $3.60 62-10215

Trans. of Giessereitechnik (Germany) 1958, v. 4, no. 9, p. 225-233.

DESCRIPTORS: *Iron castings, Manufacturing methods, Economics, Industrial research, *Castings, Metallurgical analysis

The knowledge is summarized that has been gained since the chill casting of gray iron was introduced into the Eastern Germany. The economical side of the chill casting of gray iron, and the technological construction of the various chills are stressed. The characteristic features of the various types of chills and the application possibilities thereof are described and the constructional features of the pieces of gray iron produced in such casting are pointed out.

Shor, E. R. and Shor, L. R.
ROLLED SHAPES. 18 Sep 61 [66]p. 5 refs.
MCL-1297/1-2-3; AD-265 710.
Order from OTS or SLA $6.60 62-13179

Unedited rough draft trans. of Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnykh Znanii. [Seriya 4] (USSR) 1960 [no. 27] 46p.

DESCRIPTORS: *Rolling mills, *Cast iron, Production, *Steel, *Sheets, *Metal plates, *Steel tubing, Blast furnaces.

Contents:
Certain information on the production of pig iron, steel and rolled products
How rolled products are made
  Assortment of rolled products
  Rolling mills
  Production of merchant and sheet metal
  Tube rolling
Economical rolled shapes
  An efficient assortment and expansion of the output of lightened rolled shapes
  Rolling of special and periodic shapes
  Increasing the accuracy of rolled products
The future of rolled products
  The development of the rolled-stock production
  Rolling mill of the future
Special terminology.

Wang, Yeh-ning and Chu, Chien-chung.
THE BEHAVIOR OF INTERNAL FRICTION ASSOCIATED WITH THE PROCESS OF MARTENSITE-TYPE TRANSFORMATION. 13 Nov 61 [26]p. JPRS: 11105.
Order from OTS or SLA $2.60 62-13612

Trans. of Wu Li Hsüeh Pao (Chinese People's Republic) 1959, v. 15, no. 7, p. 341-352.

DESCRIPTORS: *Martensite, Iron, Phase transitions, Steel, *Transformations, *Internal friction, Chemical analysis, Vibration.

By means of a torsion pendulum, the internal friction of two kinds of iron-manganese alloy (containing, respectively, 17.5% and 12.8% Mn) and one kind of copper-aluminum alloy (13% Al) were measured, and internal friction peaks were observed in the temperature range in which the normal martensite or reverse martensite transformation was produced. The condition for the appearance of this internal friction peak is that it only occurs when accompanied by the process of martensite-type transformation. Systematic experimentation was conducted with the iron-manganese alloy containing Mn 17.5% and it was observed that the height of the internal friction peak increases with the increase in the rate of heating, or cooling, or with the increase in stress, but

decreases with the increase of vibration frequency or with the increase of the carbon content in the specimen. A uniform explanation may be obtained by virtue of the relationship by which the greater the quantitative transformation of a specimen within one period of vibration the larger will be the internal friction.

Light Metals

Bochmann, G.
MASS CHANGES OF ANODIZED AND BARE ALUMINUM CAUSED BY MOISTURE PICKUP. [1961] 8p. (5 figs. omitted) 3 refs.
Order from SLA $1.10 61-20743

Trans. of Metalloberfläche (West Germany) 1961, v. 15, no. 5, p. 145-147.

DESCRIPTORS: *Aluminum, *Moisture, Humidity, Surface properties, Anodes (Electrolytic cell), Coatings, Thickness, Seals, Sheets, Aluminum alloys, Metallurgical analysis.

The relation between mass changes of anodized and bare 99.5% Al and Al 3%Mg and the relative humidity of the surrounding atmosphere were determined. The results were discussed with special consideration of the surface roughness and the thickness of the anodic coatings. The effects of electrolytic brightening before anodizing and the effects of sealing were also investigated on an Al 0.5% Mg sheet. Pronounced mass increases occur in anodic coatings exposed to a humid atmosphere. Bare sheets in room atmosphere retain a constant mass (within measuring accuracy). Aluminum parts of precision balances should not be anodized if their weight influences the measuring results. (Author)

Domony, A. and Lichtenberger-Bajza, E.
FORMATION MECHANISM AND PROPERTIES OF PROTECTIVE LAYERS ON ALUMINUM SURFACES FORMED UNDER VARIOUS EXTERNAL ENERGY CONDITIONS. [1961] [16]p. (8 figs. omitted) 12 refs.
Order from SLA $1.60 61-20746

Trans. of Metalloberfläche (West Germany) 1961, v. 15, no. 5, p. 134-138.

DESCRIPTORS: *Oxides *Coatings, *Surfaces, Anodes (Electrolytic cell), Electrolytic polishing, *Aluminum.

The various phenomena and reactions occurring on aluminum surfaces during the formation of an oxide layer are described. The protective layer consists of a thin barrier layer and an oxide or hydroxide layer. The thickness of the barrier layer is 10 Å and is independent of temperature and chemical composition of the environment. Only external electrical energy can influence the thickness of this barrier layer. Such a condition is present during anodizing or during electrochemical polishing. (Author)

Kubichek, L. and Mal'tsev, M. V.
INFUENCE OF CERTAIN ELEMENTS ON THE SURFACE TENSION OF ALUMINIUM-MAGNESIUM ALLOY, tr. by S. Klemantaski. 7 Jan 61 [14]p. 13 refs. FRI Trans. no. 153; [DSIR NLL] M. 4343.
Order from OTS or SLA $1.60 62-13159

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1959, v. 2, no. 4, p. 112-118.

DESCRIPTORS: *Aluminum alloys, *Magnesium alloys, *Surface tensions, Alloys.

The influence was studied of 25 elements (Li, Ca, Sr, Sn, Sb, Pb, Bi, Ti, V, B, Mo, Nb, Cr, W, Si, Cu, Ge, Ta, Be, Cd, Mn, Ce, La, In, Zr) on the surface tension of aluminum-magnesium alloy, containing 10.6% Mg and 89.4% Al.

Lichtenberger-Bajza, E.
STRUCTURE STUDIES OF 0.1 μ AND 150 to 200 μ THICK OXIDE LAYERS FORMED ELECTROLYTICALLY ON ALUMINUM. [1961] 7p. (8 figs. omitted) 8 refs.
Order from SLA $1.10 61-20747

Trans. of Metalloberflache (West Germany) 1961, v. 15, no. 2 [p. 38-41].

DESCRIPTORS: Corrosion, *Electrolysis, *Aluminum, Surfaces, Electrolytic polishing, *Oxides, Thickness, Impurities, Voltage, Electric fields, Phosphoric acids, Butanols, Solubility, Electrochemistry, Metallurgical analysis.

The oxide layer formed during electropolishing in phosphoric acid-butyl alcohol has a hexagonal cell structure similar to that obtained during anodizing. However, the pores of the polishing layer are considerably larger, and the thicknesses of the barrier layer and of the total layer and also the cell diameters are somewhat different. The protective layer contains alloying elements and impurities and also components of the electrolyte. Thickness of the oxide layer can be increased by bath voltage. The thickness is decreased by the solubility of the oxide in the electrolyte. The oxide layers have, basically, the same structure, whether they were formed during electropolishing or anodizing. Their thicknesses are determined by the equilibrium condition between the oxide-forming effect of the electric field and the oxide-dissolving effect of the electrolyte. (Author)

Nonferrous (except light) Metals

Benard, J[acques] and Albert, P[hilippe].
CHEMICAL ACTIVITY OF HYDROGEN DESORBED BY PALLADIUM AND ITS ALLOYS. [1961] 3p. (2 figs. omitted) 1 ref.
Order from SLA $1.10 62-10169

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1947, v. 224 [no. 1] p. 45-47 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Palladium, Palladium alloys, *Hydrogen, *Adsorption, Metals, Surfaces, Combustion, Temperature, Chemical reactions.

Muramatsu, Koji.
VACUUM FUSION TECHNIQUES USING NICKEL AND NICKEL-TIN BATHS, AND SOLID DIFFUSION EXTRACTION. Pt. 1 of the Determination of Micro Quantities of Gases in Molybdenum. [1961] 10p. 11 refs.
Order from SLA $1.10 61-20534

Trans. of Shinku (Japan) 1960, v. 3, no. 9, p. 341-348. Another trans. is available from ATS $27.95 as ATS-32N53J [1961] 10p.

DESCRIPTORS: *Gases, *Separation, Gaseous diffusion separation, Microanalysis, Microchemistry, *Molybdenum, Purification, Nickel, Tin, Oxygen, Nitrogen, Hydrogen, Carbon, Monoxides, Carbon compounds, Vacuum apparatus.

The vacuum fusion technique for the determination of oxygen in molybdenum was studied by using a nickel bath at 1600 and 1800°C and a nickel-tin bath at 1600°C. The solid diffusion extraction technique was also investigated at 1800°C for the determination of nitrogen and hydrogen. In these techniques, the reproducibility of analytical results obtained with 1 g samples was ±1 ppm for oxygen and nitrogen at concentrations below 30 and 10 ppm, respectively, while the reproducibility of hydrogen determination was ±0.1 ppm at concentrations below 1.0 ppm. In oxygen determinations no substantial difference was observed between the results obtained with different baths, while the results of analysis of hydrogen and nitrogen obtained by using the bath technique were lower than those obtained by using the solid diffusion extraction technique. Although agreement was found between results of oxygen determinations, the observed values of oxygen concentration are considered to be too low because of the effect of sorption of evolved carbon monoxide on the vapor or the deposited film of bath metals. (Author) *Presented before the 45th Annual Meeting of the Metallurgical Society of Japan on November 4, 1959 and the 6th Meeting of the Specialized Research Group on December 12, 1959.

Structural Metallurgy and Corrosion

Akimov, G. V.
INTERKRISTALLIJNE CORROSIE VAN LEGERINGEN (Intergranular corrosion of alloys). 19p. 25 refs. MTWL: 688. (Text in Dutch).
Order from OTS or ETC $1.85 61-17373

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk, Izvestiya, 1951, no. 1, p. 13-25.

DESCRIPTORS: *Corrosion, Alloys, *Stainless steel.

Badaeva, T. A. and Kuznetsova, R. I.
THE STRUCTURE OF ALUMINUM ALLOYS WITH Mg AND Sn, tr. by S. Klemantaski. 2 Aug 61 (20)p. 5 refs. FRI Trans. no. 160: (DSIR NLL) M. 4609.
Order from OTS or SLA $1.60 62-13136

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Metallurgii. Trudy, 1958, no. 3, p. 203-215.

DESCRIPTORS: *Aluminum alloys, *Magnesium alloys, *Tin alloys, *Structures, Mathematical analysis, Crystallization, Microstructure, Alloys.

As a result of the study of the structure of alloys of the Al-Mg-Sn system, rich in Al, by methods of thermal analysis, microstructures, electrical resistance and the measurement of parameters, it was shown that there are two quasibinary sections, formed by the compound Mg_2Sn, both with Al_3Mg_2 and with Al. These sections have diagrams of the simple eutectic type. In the parts of the diagram which are divided by the quasibinary section Al-Mg_2Sn, a eutectic equilibrium was observed. On the liquidus surface, corresponding to the primary crystallization of Al, there is a singular fold of a synclinical type corresponding to the quasibinary section Al-Mg_2Sn, which indicates the presence of molecular formations of Mg_2Sn in Al-base liquid solutions. The boundary of the ternary solid solution of Mg and Sn in Al practically adjoins the Al-Mg side, the top of the three-phase triangle coincides with the limit of solubility of Mg in Al in the solid state. (Author)

Beresnev, B. I., Vereshchagin, L. F. and others.
LARGE PLASTIC DEFORMATION OF METALS AT HIGH PRESSURES. [1961] 36p. 52 refs. MDF B-181
Order from OTS $1.00 62-11470

Trans. of mono. [Nekotorye Voprosy Bol'shikh Plasticheskikh Deformatsii Metalla pri Vysokikh Davleniyakh] Moscow, 1960.

DESCRIPTORS: *Plasticity, Deformation, *Metals, High pressure research, Mechanical properties, *Fracture (Mechanics), Pressure, Extrusion, Hydrostatic pressure, Crystal structure, Electrical conductance.

Results are surveyed and analyzed of several years of research conducted by the High Pressure Physics Institute of the USSR Academy of Science. The study was conducted to clarify those changes in the crystalline lattice which occur because the atoms draw together under the effect of external hydrostatic pressure. The program included research on the electrical conductivity of metals under pressure, the crystalline structure directly under pressure (by the method of X-ray structural analysis), galvanomagnetic properties, compressibility and the coefficient of thermal expansion, and resonance absorption of electromagnetic energy by electrons in the material. Optimum conditions were found for the process of extruding a number of metals by a fluid under pressures of up to 10,000 kilograms/sq cm.

Dekhtyar, I. Ya.
ENIGE REGELMATIGHEDEN VAN DE DIFFUSIE EN DE MECHANISCHE EIGENSCHAPPEN VAN METALEN (Some regularities of the diffusion and the mechanical properties of metals) tr. by J.H. van Santen. 8p. (foreign text included). 5 refs. MTWL: 707. (Text in Dutch).
Order from OTS or ETC $1.55 61-17330

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 80, no. 6, p. 875-878.

DESCRIPTORS: *Metals, Mechanical properties, *Diffusion, Creep.

Gonchar, V. N.
INFLUENCE OF COPPER ON THE AGEING OF ALLOYS OF ALUMINIUM WITH MAGNESIUM AND ZINC, tr. by S. Klemantaski. 19 May 61 [26]p. 8 refs FRI Trans. no. 156; [DSIR NLL] M. 4341.
Order from OTS or SLA $2.60 62-13158

Trans. of Politekhn[icheskii] Inst[itut] Leningrad. Trudy (USSR) 1959, no. 202 [p. 43ff].

DESCRIPTORS: *Aluminum alloys, Magnesium alloys, *Zinc alloys, *Age factors, *Copper, Chemical analysis, Mechanical properties, Heat treatment.

The greatest effect of ageing in the ternary system aluminium -magnesium-zinc is observed in alloys lying on the Al-T phase section. But in alloys lying on the excess zinc or magnesium side of this section ageing is developed to a lesser degree. This shows that in the ageing process one of the main hardening agents is the chemical compound $Al_2Mg_3Zn_3$. Precipitation from solid solution of the secondary speed phase and its coagulation proceed with the greatest speed when the ratio Mg/Zn = 1. Because of the high speed of precipitation in ageing for these alloys a hardness maximum is obtained. With increasing duration of ageing reduction in the mechanical properties takes place as a consequence of the coagulation process and instead of a maximum a minimum of σ_B is obtained. Introduction of copper into the ternary solid solution leads to an increase in strength and increase in its stability with respect to decomposition. Copper when present in the solution hinders diffusion processes, and therefore the precipitation of excess phases and their coagulation proceed at a slower rate compared with the ternary alloy. In the presence of copper the dispersed particles attain critical dimensions in the course of ageing at higher temperatures and prolonged holding times. (Author)

Hubner, R., Uhlworm, E. and others.
THE PROBLEM OF THE PRODUCTION OF ZINC CHROMATES AS CORROSION-PROTECTIVE PIGMENTS. [1961] [12]p. (refs. 8 figs. omitted).
Order from SLA $1.60 62-10029

Trans. of Plaste [und] Kautschuk (Germany) 1960, v. 7, no. 4, p. 208-211.

DESCRIPTORS: *Zinc compounds, *Chromates, Production, *Corrosion inhibition, *Pigments, Chemical analysis, Physical properties.

Krainer, Helmut.
INVESTIGATIONS ON TITANIUM CARBIDE AND TITANIUM CARBIDE-CONTAINING HARD METAL ALLOYS. Pt. 2 of Physical Investigations on Hard Metal Alloys. [1961] [17]p. 62 refs.
Order from SLA $1.60 62-10453

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1950, v. 21, no. 3/4, p. 123-127.

DESCRIPTORS: *Titanium compounds, *Carbides, Metals, Alloys, X-rays, Sintered alloys, Metallurgical analysis, Graphite, Lattices, Production, Quality control, Sintering, Grains (Metallurgy).

Kripyakevich, P. I.
ON THE STRUCTURE OF α-Mn AND β-Mn. [1961] 20p. 26 refs.
Order from OTS or SLA $1.60 62-10099

Trans. of #Kristallografiya (USSR) 1960, v. 5, no. 2, p. 273-281.

DESCRIPTORS: *Manganese, Crystal structure.

A description of the structures of α- and β-Mn based on the coordination characteristics of atoms is proposed; the structures of these modifications are compared with each other and with other types of structures. (Author)

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ATOMIC ENERGY, 1961, VOL. 10, NO. 6: SELECTED ARTICLES. 6 Oct 61 [161]p. 112 refs. FTD-TT-61-30; AD-267 706.
Order from OTS or SLA $12.00 62-13576

Trans. of #Atomnaya Energiya (USSR) 1961, v. 10, no. 6, p. 565-633.
Another trans. of p. 597-605 is available from OTS or SLA $1.60 as 61-28786, JPRS-8849, 6 Oct 61 [18]p.

DESCRIPTORS: Buildings, *Structures, Floors, Walls, *Radiation damage, Countermeasures, *Coatings, Plastic coatings, Varnishes, *Reactor fuels, *Atomic energy engineering, Graphite, Neutrons, Nuclear reactions, Radiation effects, Oxidation, *Uranium, Acids, *Plutonium compounds, *Oxides, *Fluorides, Chemical analysis, *Hydrogen compounds, Liquid hydrogen, Hydrolysis, Solubility, Phase studies, Radioactivity, *Fission fragments, Nuclei, Half life, Thermal stresses, Heat resistant alloys, *Cesium, Radioactive isotopes, Thermodynamics, Electric power production, Ores, Rock, *Radium, *Potassium, *Thorium, Dosimeters, Gases, *Calcium compounds, *Sulfur period elements, *Phosphors, *Thermal diffusion separation, *Neon.

Contents:
Partial fuel reloading in nuclear reactors, by E. I. Grishanin and others
The effect of irradiation on certain properties of graphite, by V. M. Agranovich and L. P. Semenov
The neutron yield from reactions $Li^6(t, n)$ and $Li^7(t, n)$ by A. K. Val'ter and others
The effect that the addition of certain compounds has on the oxidation of uranium in acids, by G. M. Nesmeyanova and G. M. Alkhazashvili

Investigation of the system PuO_2F_2 - HF - H_2O (20°C isotherm) by I. F. Alenchikova and others
Coverings for structural elements in radioactive buildings, by A. N. Komarovskii
Certain questions of thermal strength in reactor engineering, by Ya. B. Fridman and others
Anisotropy of fission fragments of Pu^{240} and Pu^{239} nuclei, by V. G. Nesterov and others
Half-life of Cs^{137}, by M. P. Glazunov and others
The problem of the thermodynamic cycles of atomic power stations, by D. D. Kalafati
The influence of the material composition of uranium ores on the scintillation spectrum of their γ-radiation, by A. G. Grammakov and others
Determination of the contents of radium, thorium, and potassium in rocks from an airplane, by N. D. Balyasnyi and others
The use of a $CaSO_4$-Sm phosphor in dosimetry, by A. R. Krasnaya and others
The maximum possible concentrations of radioactive isotopes of inert gases from fission, by Yu. V. Sivintsev
The separation of neon isotopes by the thermal diffusion method, by L. S. Kotousov and others.

[NUKLEONIKA] 1959, VOL. 4, NO. 2: [SELECTED ARTICLES] tr. by Eugene Lepa. 1961, 93p. 153 refs. PL-480 Agr.
Order from OTS $0.50 AEC-tr-4151

Trans. of Nukleonika (USSR) 1959, v. 4, no. 2, p. 119-139, 141-159, 161-198, 201-225, 228-236,

DESCRIPTORS: *Neutrons, Phonons, *Solids, Conferences, *Uranium, Chemistry, Quantitative analysis, *Atomic energy engineering, Biology, Medical research, Scientific personnel, Training, *Radioactive fall-out, *Proportional counters, Boron compounds, Fluorides, Design, *Pulse analyzers, Neutron detectors.

Contents:
The neutron: phonon interaction in solids, by B. Buras and D. O'Connor
Uranium technology at International "Atoms-for-Peace" Conference in Geneva (no. 2) by T. Adamski
Notes on the chemical subjects at the International "Atoms-for-Peace" Conference (no. 2) in Geneva, by S. Minc
Analytical chemistry at the International "Atoms-for-Peace" Conference (no. 2) in Geneva, by J. Minczewski
Prospects for nuclear power development against background of International [Atoms-for-Peace] Conference (no. 2) in Geneva, by S. Andrzejewski
Principal biological and medical subjects at International "Atoms-for-Peace" Conference (no. 2) in Geneva, by W. Ostrowski
Discussion of personnel training at the International Conference [Atoms-for-Peace] (No. 2) in Geneva, by J. Hurwic
Radioactive fall-out studies at Hornsund Fiord in Spitzbergen, by Z. Jaworowski
The design, technology and properties of boron trifluoride proportional counters, by A. Kazimierski
Communications: 144-channel pulse time-distribution analyzer operating with mechanical neutron selector
Chronicle.

Chebotarev, N. T. and Beznosikova, A. V.
DITALATION THERMIQUE DU PLUTONIUM (Termicheskoe Rasshirenie α-Plutoniya) [Thermal Expansion of α-Plutonium]. 27 Sep 61 [9]p. (Russian text included) 3 refs. CEA Trans. R 140 (text in French).
Order from OTS or SLA $1.10 62-13819

Trans. in French of #Atomn[aya] Energ[iya] (USSR) 1959 [v. 7, no. 1] p. 68-69.

DESCRIPTORS: *Thermal expansion, *Plutonium, Structures, Mathematical analysis, Nuclear physics, Atomic energy engineering.

Küchle, M.
MEASUREMENT OF THE TEMPERATURE DEPENDENCE OF NEUTRON DIFFUSION IN WATER AND DIPHYL BY THE PULSED SOURCE METHOD (Messung der Temperaturabhangigkeit der Neutronendiffusion in Wasser und Diphyl mit der Impulsmethode) [1961] [25]p. (8 figs. 3 tables omitted) 28 refs.
Order from SLA $2.60 61-20508

Trans. of Nukleonik (West Germany) 1959, v. 2, no. 4, p. 131-136.

DESCRIPTORS: *Water, *Diphenyl, *Oxides, *Thermal neutrons, *Diffusion, Neutron cross sections, Temperature.

With the help of a pulsed neutron source, the absorption cross section, diffusion coefficient, and diffusion cooling coefficient for thermal neutrons are determined in water and diphyl in a temperature range from 22°C to 80°C and 20°C to 180°C, respectively. The results are compared with measurements and calculations of other authors. The sources of error in the pulse method are discussed. (Author)

Medvedev, S. S.
PROSPECTS OF UTILIZATION OF NUCLEAR RADIATIONS IN CHEMISTRY. Paper pub. in Isotopes and Radiations in Chemistry (Izotopy i Izlucheniya v Khimii). [1961] [37]p. 65 refs.
MCL-582/III; AD 257 146.
Order from OTS or SLA $3.60 61-27158

Trans. of Vsesoyuznaya Nauchno-Tekhnicheskaya Konferentsiya po Primenenie Radioaktivnykh i Stabil'nykh Izotopov i Izluchenii v Narodnom Khozyaistve i Nauke [no. 2] Moscow, 4-12 Apr 57. Trudy, 1958, p. 85-105.

DESCRIPTORS: *Polymers, *Polymerization, Benzenes, Ethylenes, Styrenes, *Radiochemistry, Photochemistry, Hydrocarbons, Organic compounds, Radioactive isotopes, Radiation damage, Decomposition, Copolymerization, Oxidation, Chlorination, Chemical reactions.

Of all the processes considered, the most promising today are the high-efficiency chain processes of polymerization, chlorination, and oxidation of organic compounds. The specific properties of nuclear radiation are most clearly manifested in the resultant processes in polymers. Owing to the large size of the polymer molecules, fundamental changes

in their properties can be induced by relatively small amounts of energy, although such changes would be difficult or impossible by the conventional chemical methods. Radiation-induced modification of polymer properties is therefore one of the most important prospects of the application of nuclear radiation in chemistry. The energy-consuming processes have been little studied. But it is precisely these chemical processes that should, in the future, become the principal consumers of atomic energy. The available data indicate the possibility, in principle, of accomplishing such processes by utilizing a considerable part of the main energy of atomic transformations. (Author)

Elementary Particles

Kobolev, L. Ya.
ON TAKING CORRELATION INTO ACCOUNT IN A SYSTEM OF INTERACTING PARTICLES. [1960] 9p. 11 refs. MDF K-209.
Order from OTS $0.50 62-11492

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1958, no. 1, p. 68-77.

DESCRIPTORS: *Particles, Quantum mechanics, Mechanics, Electrons, Correlation techniques, *Green's function.

The dynamic Schwinger principle, which leads to functional equations for the Green's function, is used to describe the behavior of a system of nonrelativistic particles. The possibility is shown of describing the correlation in a system of particles by using the Green's function. The correlation between particles can be described by using a nonrelativistic mass operator. An equation is presented for a single-particle density matrix which takes into account correlation due to both electrical and also magnetic interaction and the relation to the Hartree-Fock equation is mentioned. (Author)

Meshcheryakov, M. G. and Neganov, B. S.
PRODUCTION OF MESONS IN THE REACTION $p + p \rightarrow d + \pi^+$ IN THE REGION 510-660 MEV. 5p. 6 refs. MTWL: 976.
Order from OTS or ETC $1.40 61-17538

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100, no. 4, p. 677-679.

DESCRIPTORS: Proton beams, Energy, Protons, *Mesons.

Pontecorvo, B. M. and Selivanov, G. I.
PRODUCTION OF π^0-MESONS BY NEUTRONS. 6p. 11 refs. MTWL: 982.
Order from OTS or ETC $1.55 61-17544

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 102, no, 2, p. 253-256.

DESCRIPTORS: *Mesons, Neutron beams, Energy, Nuclei.

Pontecorvo, B. M. and Selivanov, G. I.
PRODUCTION OF π^0-MESONS IN HYDROGEN AND DEUTERIUM BY PROTONS WITH AN ENERGY OF 400 MEV. 5p. 9 refs. MTWL: 983.
Order from OTS or ETC $1.40 61-17545

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 102, no. 3, p. 495-497.

DESCRIPTORS: Hydrogen, Deuterium, *Mesons, Neutron beams, Protons, Energy.

Tyapkin, A. A., Kozodaev, M. S. and Prokoshkin, Yu. D.
PRODUCTION OF π^0-MESONS BY PROTONS WITH ENERGIES OF 670 MEV ON NUCLEI OF VARIOUS ELEMENTS. 6p. 5 refs. MTWL: 975.
Order from OTS or ETC $1.55 61-17537

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100, no. 4, p. 689-692.

DESCRIPTORS: *Nuclei, Proton beams, *Mesons, Chemical elements, Energy.

Nuclear Reactions

Bogachev, N. P. and Vzorov, I. K.
THE ELASTIC SCATTERING OF PROTONS BY PROTONS AT AN ENERGY OF 660 MEV. 5p. 11 refs. MTWL: 974.
Order from OTS or ETC $1.40 61-17536

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 99, no. 6, p. 931-933.

DESCRIPTORS: *Protons, Proton beams, *Scattering, Elastic scattering, Energy.

Dzhelepov, V. P., Golovin, B. M., and Satarov, V.I.
THE ELASTIC SCATTERING OF NEUTRONS BY NEUTRONS AT AN ENERGY OF 300 MEV. 6p. 11 refs. MTWL: 973.
Order from OTS or ETC $1.55 61-17535

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 99, no. 6, p. 943-946.

DESCRIPTORS: *Neutrons, Neutron beams, Elastic scattering, *Scattering, Energy.

Dzhelepov, V. P., Kazarinov, Yu. M., and Flyagin, V. B.
EXCHANGE SCATTERING OF NEUTRONS WITH AN ENERGY OF 380 MEV BY DEUTERONS AND THE SPIN DEPENDENCE OF EXCHANGE FORCES. 5p. 7 refs. MTWL: 979.
Order from OTS or ETC $1.40 61-17541

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100, no. 4, p. 655-658.

DESCRIPTORS: *Neutron beams, Energy, *Scattering, Deuterons, Spin, Protons.

Meshcheryakov, M. G., Bogachev, N. P. and others. THE ELASTIC SCATTERING OF PROTONS BY PROTONS AT AN ENERGY OF 460 MEV. 6p. 12 refs. MTWL: 972.
Order from OTS or ETC $1.55 61-17534

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 99, no. 6, p. 955-958.

DESCRIPTORS: *Protons, Proton beams, Elastic scattering, Energy. *Scattering.

Meshcheryakov, M. G., Neganov, B. S. and others. THE PRONOUNCED VARIATION IN THE CROSS-SECTION FOR ELASTIC SCATTERING OF PROTONS BY PROTONS IN THE REGION 460-660 MEV. 5p. 11 refs. MTWL: 971.
Order from OTS or ETC $1.40 61-17533

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 99, no. 6, p. 959-961.

DESCRIPTORS: *Protons, *Scattering, Proton beams, Elastic Scattering, Mesons, Energy.

Meshcheryakov, M. G., Neganov, B. S. and others. THE REACTION $p+p \rightarrow d+\pi^+$ AT 460 MEV. 6p. 10 refs. MTWL: 977.
Order from OTS or ETC $1.55 61-17539

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100, no. 4, p. 673-676.

DESCRIPTORS: Nucleons, *Mesons, Protons, Proton beams.

Selektor, Ya. M., Nikitin, S. Ya. and others. THE SCATTERING OF PROTONS WITH ENERGY OF 460-660 MEV BY PROTONS. 5p. 8 refs. MTWL: 970.
Order from OTS or ETC $1.40 61-17532

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 99, no. 6, p. 967-969.

DESCRIPTORS: *Protons, *Scattering, Energy, Proton beams.

PHYSICS

APPLIED PHYSICS, INSTRUMENTS AND ULTRASONIC EQUIPMENT: SELECTED ARTICLES. 1961, 288p. 72 refs. PL-480 Comm.
Order from OTS $3.00 60-51094

Trans. of Peredovoi Nauchno-Tekhnicheskii i Proizvodstvennyi Opyt (USSR) 1958, tema 8, no. M-58-267/4; tema 21, no. 58-219/13; tema 32, no. M-58/109/1; tema 31, no. P-58-14/2; tema 31, no. P-58-15/3; tema 33, no. P-58-86/3; tema 34, no. P-58-6/1; tema 34, no. P-58-91/11; tema 37, no. P-52-19/2; tema 32, no. P-58-13/5.

DESCRIPTORS: *Applied physics, Physics, Instrumentation, *Ultrasonic equipment, Ultrasonics, Materials, Machining, Test equipment, Detectors, Thulium, Gases, Spectrographic analysis, Thermometers, Manometers, Vibration, Pyrometers, Electromagnetic fields, Geophysical prospecting, Photographic equipment, Polymers, Impact shock, Optical equipment, Accelerometers.

Contents:
The UZG-2 ultrasonic device for machining parts made of hard materials, by V. I. Zaslavskii and others
Ultrasonic flaw-detection, by N. V. Klimchenko
Thulium 170 as a source of radiation for gamma-flaw-detection, by S. B. Rumyantsev and L. N. Matsyuk
Vibration stands for calibration of vibration meters and accelerometers over a wide frequency range, by Rimma Vasil'evna Vasil'eva
KTL-10 instrument for measuring angular velocity and frequency of low speed drives, by R. I. Utyamyshev
Apparatus for spectral analysis of gases in metals, by B. Borovski and S. A. Skotnikov
Apparatus for the measurement of non-stationary aerodynamic pressures of rotating models, by G. G. Smirnov
The PTV-30 instrument for the measurement of temperature by means of resistance gages, by R. I. Utyamyshev
Quick-acting clamp for calibration of manometers and vacuum meters, by V. P. Kislev
Photopyrometric determination of zones of surface temperatures, by Ya. I. Merson and others
Electromagnetic field station for deep geological prospecting, by A. P. Ivanov
Universal stereophotogrammetric apparatus, by A. B. Tsar'kov
Impact machine for testing impact strength of hard polymers, by L. A. Laius
Polarization device for studying stresses by optical methods, by B. M. Zuev and S. G. Stepanov.

PHYSICS: TRANSLATIONS OF SELECTED ARTICLES. 21 Dec 61 [102]p. 48 refs. JPRS: 11609.
Order from OTS or SLA $9.10 62-15239

Trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1961, v. 40, no. 6, p. 1543-1550, 1676-1681, 1775-1787, 1825-1831, 1866-1870.

DESCRIPTORS: *Physics, *Superconductivity, Thin films, Tin, *Ferromagnetic materials, *Plasma physics, *Ions, Behavior, Particles, Plasma oscillations.

Contents:
Destruction of superconductivity in thin tin films, by A. M. Kolchin and others
On the conductivity electron interaction induced by spin waves in a ferromagnetic substance, by S. V. Vonsovskii and M. S. Svirskii
On spatial dispersion in a relativistic plasma, by V. N. Tsytovich
Peculiarities of the behavior of multi-charged ions in a plasma, by A. V. Gurevich
Interaction of charged particle beams with low-frequency plasma oscillations, by A. I. Akhiezer and others.

Pekar, Yu. A.
ON THE QUESTION OF THE HEAT CONDUCTION OF A FULLY IONIZED PLASMA, tr. by Morris D. Friedman. Jan 61 [7]p. 4 refs. AFCRL 20; MDF P-158; AD-252 209.
Order from OTS $0.50 62-11500

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 2, p. 99-102.

DESCRIPTORS: *Plasma physics, *Thermal conductivity, Electrons, Ions, Temperature, Gas ionization, Heat transfer, Electric currents, Electrical conductance.

Electron and ion temperature distributions are obtained for a fully ionized plasma bounded by parallel heat-eliminating walls, under the condition of constant current density across the cross-section in the two limiting cases of strong and weak anisothermy. (Author)

Schulz, P.
ELECTRICAL DISCHARGES IN RARE GASES AT HIGH PRESSURES. I. ARC AND SPECTRAL PROPERTIES OF RARE GAS HIGH PRESSURE DISCHARGES. [1961] [21]p. (13 figs. omitted) 21 refs.
Order from SLA $2.60 62-10070

Trans. of Ann[alen] der Physik (East Germany) 1947, ser. 6, v. 1, p. 95-106.
A trans. of pts. 1-2 is available from SLA $3.60 as 61-18765 [1961] 39p.

DESCRIPTORS: *Rare gases, Neon, Argon, Krypton, Xenon, *Electric discharges, Infrared spectroscopy, Ultraviolet spectroscopy.

Acoustics

Brekhovskikh, L. M., Evtushenko, V. A. and others.
THE CALCULATION OF THE VERTICAL PROFILE OF THE VELOCITY OF SOUND PROPAGATION IN THE SEA. [1961] [3]p. 4 refs. [DSIR NLL] M 4334.
Order from OTS or SLA $1.10 62-13153

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 135, no. 3, p. 581-583.

DESCRIPTORS: *Underwater sound, Sound, Propagation, Velocity, Determination.

A new method is suggested for determining the mean relationship of the sound velocity with depth, based on the use of "characteristic points". For this method, the whole depth of the ocean in a given region is divided into a certain number of layers, taking into account the physico-chemical characteristics of the medium and, in particular, the θ- and S-curves. Then each partial curve describing the relationship of the speed velocity with the depth z (c (z)-curve) is approximated by the corresponding broken line with the gradient dc/dz, which is constant within the limits of each layer. The error of approximation here should not exceed a certain value Δ c, fixed beforehand. The salient points of the approximating broken line are in fact the characteristic points in the plane (c, z). The mean depth and sound velocity are then found for each of the characteristic points. By joining these coordinates with straight lines, we obtain a broken line describing the mean distribution of sound velocity in depth.

Gorbachevski, O. S.
ON THE SUPERDISTANCE PROPAGATION OF SOUND IN STRETCHES OF DEEP WATER (O Sverkhdad'nem Rasprostranenii Zvuka v Gdubokovodnykh Oassel nakh) tr. by E.R. Hope. 4p. 2 refs. MTWL: 890.
Order from OTS or ETC $1.55 61-17620

Trans. of Priroda (USSR) 1951, no. 2, p. 54-

DESCRIPTORS: Water, Sound, *Propagation, *Underwater sound.

Scherer, Karl.
ARRANGEMENT FOR INDICATING SUBAQUEOUS POINTS ON SUBMARINE CABLES AND UNDERWATER AMPLIFIERS BY ACOUSTICAL METHODS OF POSITION FINDING, tr. by G. E. 30 Aug 61, 9p. 2 refs.
Order from OTS or SLA $1.10 61-28087

Trans. of German Auslegeschrift (DAS) 1,042,439, cl. 74d, 6.15, internat'l. cl. G-08f, by Siemens and Halske AG, appl. 20 Mar 56, announced and laid open to inspection 30 Oct 58.

DESCRIPTORS: *Position finding, Ultrasonics, Echo ranging, *Acoustics, Reflectors, Underwater equipment, Amplifiers, *Underwater object locators, Submarines

The arrangement is characterized in that the acoustic reflector provided for location of the subaqueous spot and which is tuned as a resonator radiates a preferred (privileged) acoustic (audio) frequency.

Schmidt, G. and Kutschabsky, L.
MODES OF VIBRATION OF CYLINDRICAL DISKS OF BARIUM TITANATE CERAMIC. [1961] 7p. 5 refs.
Order from SLA $1.10 62-10078

Trans. of Acustica (Switzerland) 1960, v. 10, no. 1, p. 30-34.

DESCRIPTORS. *Ceramic materials, *Barium compounds, *Titanates, Disks, Cylindrical bodies, *Vibration, *Resonance.

The axial movement of the surfaces of cylindrical disks of $BaTiO_3$ were investigated, using a capacitance probe, in order to determine the mode of vibration of important resonance points in the neighborhood of the thickness mode. The ratio of diameter to thickness ranged from 4 to 25.9. A description of the method is followed by a summary of the observed amplitude distributions. In no case was a resonance with approximately piston like mode of vibration (such as would be expected in an infinite plate) observed. (Author)

Electricity and Magnetism

Akulov, N.A., Galkina, O.S., and Ivanovskiĭ, V.I.
THEORIE VAN DE HYSTERESISLUS (Theory of hysteresis loops) tr. by J. H. van Santen. 9p. 5 refs.
MTWL: 717. (Text in Dutch).
Order from OTS or ETC $1.55 61-17320

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 68 no. 5, p. 833-836.

DESCRIPTORS: Hysteresis, Theory.

Akulov, N. S. and Bol'shova, K. M.
OVER DE MAGNETISERINGSKROMME VAN PLASTISCH GEDEFORMEERD IJZER IN STERKE VELDEN. (The magnetization curve for plastic deformed iron in strong fields). 7p. 8 refs. MTWL: 683.(Text in Dutch).
Order from OTS or ETC $1.55 61-17368

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v.83, p. 817-819.

DESCRIPTORS: Iron alloys, Plasticity, Deformation, *Magnetic susceptibility.

Hellenthal, Wolfgang.
MAGNETIC RESISTANCE CHANGE IN NICKEL VAPORIZATION LAYERS IN DEPENDENCE ON LAYER THICKNESS AND STRUCTURE. [1961] [15]p. 17 refs.
Order from SLA $1.60 62-10413

Trans. of Zeitschrift für Physik (West Germany) 1958, v. 151, p. 421-430.

DESCRIPTORS: *Nickel, *Vaporization, Thickness, *Ferromagnetism, Ferroelectricity, *Resistance

The ferromagnetic resistance change in nickel vaporization layers is investigated. The relative magnitude of the total effect (electrical resistance at saturation magnetization parallel to current minus resistance with transverse saturation, divided by the sample resistance) declines with decreasing layer thickness. A quantitative connection to the relationships in compact material is possible if there are taken into consideration both the increase in electrical resistance dependent on layer thickness and structure and also the decrease of the spontaneous magnetization. Values of spontaneous magnetization determined from the resistance measurements yield an agreement with results obtained by other methods. (Author)

Kapitsa, P. L.
THE NATURE OF BALL-LIGHTNING. 6p. 7 refs.
MTWL: 984.
Order from OTS or ETC $1.55 61-17546

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 101, no. 2, p. 245-248.

DESCRIPTORS: *Lightning, Electromagnetic waves, Waveguides, *Explosions, Theory.

Kondorskiĭ, E.
SINGLE-DOMAIN STRUCTURE IN FERRO-MAGNETIC MATERIALS AND MAGNETIC PROPERTIES OF FINELY-DISPERSED MATERIALS. 8p. 5 refs.
MTWL: 594.
Order from OTS or ETC $1.55 61-17289

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 74, no. 2, p. 213-216.

DESCRIPTORS: *Magnetism, Ferromagnetism, Magnetic moment, Magnetic properties, Powders, Theory, Structures.

Kondorskiĭ, E.
SINGLE-DOMAIN STRUCTURE IN FERRO-MAGNETIC MATERIALS AND MAGNETIC PROPERTIES OF FINELY DISPERSED MATERIALS. 9p. 10 refs. MTWL: 729.
Order from OTS or ETC $1.55 61-17312

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v.70, no. 2, p. 215-218.

DESCRIPTORS: *Ferromagnetic materials, Magnetic properties, Colloids, Structures.

Laptei, D. A. and Drokin, A I
DEPENDENCE OF THE TEMPERATURE MAGNETIC HYSTERESIS ON THE STATE OF THE SAMPLE. [1960] 5p. 9 refs. MDF L-132.
Order from OTS $0.50 62-11499

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1959, no. 4, p. 43-47.

DESCRIPTORS: Magnetic materials, *Ferromagnetic materials, Nickel, Magnetic fields, Temperature, *Hysteresis

The temperature magnetic hysteresis over the "A" cycle was studied. The initial states of the investigation were points of the magnetic hysteresis loop of the samples under investigation. The dependence of the absolute value of the temperature magnetic hysteresis on the magnitude of the external magnetic field is presented. The maximum value of the magnetization on the heated branch is shifted toward lower temperatures as the field grows. (Author)

Luk'yanov, F. N.
MEANS OF PREVENTING EXPLOSIONS CAUSED BY STATIC ELECTRICITY WHEN FILLING TANKS AND OTHER SUCH CONTAINERS WITH OIL PRODUCTS. 9p. MTWL: 894.
Order from OTS or ETC $1.55 61-17603

Trans. of Neftyanoe Khozyaĭstvo (USSR) 1956, no. 5, p. 59-63.

DESCRIPTORS: Oil tanks, *Static electricity, Explosions, Mineral oils, *Fluid flow.

Miyata, Akira and Ito, Koichi.
NEW PROCESS OF PREPARING MAGNETIC POWDER FOR SOUND RECORDING TAPE. [1961] 7p. 5 refs.
Order from SLA $1.10 61-10357

Trans. of [N H K Gijutsu Kenkyu (Japan) 1959] v. 11, no. 5, p. 303-305.

DESCRIPTORS: *Magnetite, * Powders, Preparation, Magnetic properties, *Magnetic tape, Magnetic recording systems, Recording systems, Materials.

The process consists in preparing acicular magnetite in which ferrous oxalate is thermally decomposed and the resulting unstable ferrous oxide is reacted, in the absence of air, directly with acicular iron oxide mixed with it, so as to obtain acicular magnetite. The reaction used to be carried out in hydrogen or in vacuum state, but ammonia is easier to handle and gives results as good as nitrogen does. The ammonia gas generated from aqueous ammonia and dried by letting it pass through calcium oxide is led into the reaction chamber. Magnetite powder thus prepared has magnetic properties quite comparable with those of the magnetite prepared by hydrogenation of acicular iron oxide--by Camras method. (Author)

Neel, M. Louis.
SUPERANTIFERROMAGNETISM IN THE FINE GRAINS. [1961] 5p. 5 refs.
Order from SLA $1.10 62-10346

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1961 [v. 253] no. 2 [p. 203-208] (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Antiferromagnetism, Magnetism, *Grains (Metallurgy), Thickness, Magnetic fields, Magnetic moments, Magnetic susceptibility.

Neel, M. Louis.
SUPERPOSITION OF THE ANTIFERROMAGNETISM AND THE SUPERPARAMAGNETISM IN A VERY FINE GRAIN. [1961] 4p. 1 ref.
Order from SLA $1.10 62-10345

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1961 [v. 253] no. 1, p. 91-12 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Antiferromagnetism, *Paramagnetism, Magnetism, *Grains (Metallurgy), Magnetic fields, Magnetic moments, Magnetic susceptibility.

Pushkov, N. V. and Dolginov, S. Sh.
STUDY OF THE GEOMAGNETIC FIELD FROM ARTIFICIAL SATELLITES AND ROCKETS tr by E.R.Hope. 17p. 20 refs. MTWL: 923.
Order from OTS or ETC $1.85 61-17585

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1957, v. 63, no. 4, p. 645-656.

DESCRIPTORS: Rockets, Satellites, *Terrestrial magnetism, *Measurements.

Schwabe, E.
THEORETICAL DISCUSSION OF THE INFLUENCE OF FERROMAGNETIC COERCIVE FORCES OF SPHEROIDAL INCLUSIONS WHICH ARE SMALL AS COMPARED WITH THE THICKNESS OF THE BLOCH WALLS. Sep 61.
Order from BISI £3 10s BISI-2139

Trans. of Annalen der Physik (East Germany) 1952 [ser. 6] v. 11, no. 2/3, p. 99-112.

DESCRIPTORS: *Ferromagnetism, Ellipsoids, Magnetic properties, Magnetism, Theory

Tolpygo, K. B.
DE THERMISCHE ELECTRONEN-EMISSIE VAN DUNNE HALFGELEIDERLAAGJES (The thermoelectronic emission from thin films of a semiconductor) tr. by J. H. van Santen. 18p. 6 refs. MTWL: 712. (text in Dutch).
Order from OTS or ETC $1.85 61-17315

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1949, v. 19, no. 11, p. 1301-1311.

DESCRIPTORS: *Semiconductors, Thermoelectricity, Electrons.

Electronics

Kukanov, A. B.
ON THE QUESTION OF THE POLARIZATION OF ELECTRON WAVES UPON REFLECTION FROM A FLAT METALLIC SURFACE. [1959] 10p. 9 refs. MDF K-203.
Order from OTS $0.50 62-11487

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii] Fizika (USSR) 1959, no. 4, p. 3-12.

DESCRIPTORS: Metals, Surfaces, *Electrons, Polarization, Reflection, *Quantum mechanics, Mechanics, Relativity theory, Spin, *Electron beams, Matrix algebra, Tensor analysis

The problem of the reflection of electron waves from a plane metallic surface (taking the force of the electrostatic image into account) is solved by the methods of relativistic quantum mechanics. The analysis is limited to states with positive energies. The concept of the vector of the spin in the mean (where the words "in the mean" will be omitted) is used as the basic concept in investigation of the polarization of electron waves. The formulas obtained, which define the direction of the spin vector of the reflected particles as a function of the direction of the spin vector of the incident particles, the angle of incidence and the quantity $\beta_0 = k/K$, wherein both the reflected and the incident particles are considered far from the metal ($|2ik_3z| \gg 1$) Under this condition it has been shown, in particular, that the direction of the spin vector does not change with reflection if it lies in a plane perpendicular to the plane of incidence and the flat metal surface for the incident particles. In the nonrelativistic case any direction of the spin vector is conserved with reflection. It is shown that the states with longitudinal polarization are transformed, under reflection, into states with transverse polarization (the spin vector lies in the incident plane) and conversely, if the condition $\tan\theta = \sqrt{1 - \beta_0^2}$ is satisfied for the angle of incidence. (Author)

Marzuvanov, V. L.
ON THE PECULIARITIES OF AN ARC DISCHARGE IN THE ATMOSPHERE OF CERTAIN GASES. [1960] 4p. 6 refs.
Order from OTS or SLA $1.10 62-19268

Trans. of A[kademiya] N[auk] SSSR. Izv[estiya]. Ser[iya] Fiz[icheskaya] 1959, v. 23, no. 9, p. 1059-1061.

DESCRIPTORS: *Gases, Helium, Argon, Air, Nitrogen, Chlorine, Carbon compounds, Monoxides, Electric arcs, *Electric discharges, *Gas discharges, Intensity, Spectrographic analysis, Electrodes, Temperature, Evaporation.

A study was made of the intensity, spectral composition of the emission, electrode temperature, and evaporation rate of the elements of a dc discharge in helium, argon, air, nitrogen, chlorine, and carbon monoxide atmospheres.

Pavlov, Yu. V.
ON THE THEORY OF A RADIO DIRECTION FINDER WITH CONICAL SCANNING. [1960] 9p. 8 refs. MDF P-150.
Order from OTS $0.50 62-11504

Trans. of #Radiotekh[nika] 1959, v. 14, no. 12, p. 50-57.

DESCRIPTORS: *Direction finding, *Radio equipment, Theory, Radar scanning, Sensitivity, Radiometers

Expressions are derived for the limiting and angular response of a modulation type radio direction finder with conical scanning. A formula is found for the equivalent antenna temperature which is valid for a radio direction finder with any noise coefficient, including quantum noise also. (Author)

Shirokov, M. F.
DE THEORIE VAN LAAGJES IN EEN GASONTLADING (On the theory of striae in gaseous discharge) tr. by K. Compaan. 8p. (foreign text included). 13 refs. MTWL: 697. (Text in Dutch).
Order from OTS or ETC $1.55 61-17340

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 89, no. 5, p. 837-840.

DESCRIPTORS: *Gas discharges, Theory.

Vudynskiĭ, M. M.
EEN BEELD VAN DE VELDEMISSIE VAN ELECTRONEN (A form of emission of electrons extracted by the electric field) tr. by K. Compaan. 9p. (foreign text included). MTWL: 699. (Text in Dutch).
Order from OTS or ETC $1.55 61-17342

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1950, v. 20, p. 1306-1310.

DESCRIPTORS: *Electrons, Electric fields, *Field emission.

Abrikosova, I. I. and Deryagin, B. V.
THE LAW OF INTERMOLECULAR INTERACTION AT GREAT DISTANCES. [1961] 6p. (6 refs. 3 figs. omitted).
Order from OTS or SLA $1.10 62-10107

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 90, no. 6, p. 1055-1058.

DESCRIPTORS: *Molecules, *Molecular structure, Colloids, Liquids, Stability.

Astaf'ev, I. V. and Shatenshteĭn, A. I.
ABSORPTION SPECTRA OF CARBANIONS. 10p. 22 refs. MTWL: 956.
Order from OTS or ETC $1.55 61-17550

Trans. of Optika i Spektroskopiya (USSR) 1959, v. 6, no. 5, p. 631-636.

DESCRIPTORS: *Hydrocarbons, Ionization, Acids, Potassium compounds, Amides, Hydroxides, *Absorption, *Spectrographic analysis.

Babushkin, A. A. and Uvarov, A. V.
INFRARED SPECTROSCOPIC INVESTIGATIONS OF THE ADSORPTION AND SURFACE REACTIONS OF ETHYL ALCOHOL ON ALUMINIUM OXIDE. 7p. 7 refs. MTWL: 826.
Order from OTS or ETC $1.55 61-17385

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 110, no. 4, p. 581-584.

DESCRIPTORS: *Aluminium compounds, *Oxide, *Ethanol, Adsorption, Catalysis, *Infrared spectroscopy, Chemical reactions.

Chernitskaya, R. E.
ABSORPTION SPECTRA AND DISSOCIATION CONSTANTS OF DIPHENYL-THIOCARBAZONE (DITHIZON) AND ITS INTERNALLY COMPLEX SALTS. II. ABSORPTION SPECTRA AND INSTABILITY CONSTANTS OF INTERNALLY COMPLEX SALTS OF DITHIZON IN AN ISOAMYL ALCOHOL SOLUTION. 10p. 4 refs. MTWL: 592.
Order from OTS or ETC $1.55 61-17287

Trans. of Zhurnal Obshcheĭ Khimii (USSR) 1952, v. 22, no. 3, p. 408-414.

DESCRIPTORS: *Spectographic data, Absorption, *Complex compounds, *Dithizone, Alcohols, Water, Solutions, Chemical bonds, Salts, Metallic compounds.

Heller, S.
NEW METHODS FOR STUDYING MONOMOLECULAR FILMS. [1961] [5]p. (refs. 10 figs. omitted).
Order from SLA $1.10 62-10412

Trans. of Kolloid-Zeitschrift (West Germany) 1954, v. 136, no. 2/3, p. 120-124.

DESCRIPTORS: *Monomolecular films, Films, Surface tension, Permeability, Thrust, Water, Evaporation.

Kleinberg, A. V. and Terenin, A. N.
FLUORESCENCE SPECTRUM OF GASEOUS NITRIC OXIDE AND THE EFFECT OF FOREIGN GASES ON IT (Spektra Flourestsentsii Gazoovraznoi Okisi Azota i Vliyanie na Nego Postovonnikh Gazov). [1961] 3p.
Order from OTS or SLA $1.10 61-28011

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1955, v. 101, no. 3, p. 445-447.
Another trans. is available from ATS $6.00 as ATS-85N53R [1961] 3p.

Portions of this report will not reproduce well.

DESCRIPTORS: *Nitrogen compounds, Oxides, Gases, Fluorescence, Spectrographic analysis

The fluorescence method was used to study the dissipation of vibration quanta of the NO molecule. Nitric oxide has three absorption bands in the region of 2000-2300 A, which belong to the γ-system of bands ($X^2\Pi \rightarrow A^2\Sigma^+$ transition). Quenching of the NO fluorescence was observed on addition of CO, CO_2, and C_2H_4, H_2O and C_2H_5OH vapors. Probability (γ) of dissipation of the vibration quantum (1', 0') of an NO molecule in collisions with various partners are as follows: He 0.02, Ne 0.07, A 0.05, H_2 < 0.01, N_2 0.07, CH_4 0.05 Hexane 0.3, and Cyclohexane 0.7.

Korsunskii, M. I. and Genkin, Ya. E.
X-RAY L-SPECTRA OF NIOBIUM IN NIOBIUM DIBORIDE, NITRIDE AND CARBIDE, AND THE NATURE OF THE BOND IN THESE COMPOUNDS. 28 Aug 61 [9]p. (4 figs, 2 tables omitted) 8 refs. MCL-1019; AD-267 734.
Order from OTS or SLA $1.10 62-15199

Unedited rough draft trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1960, v. 6, p. 169-173.

DESCRIPTORS: *Niobium compounds, *Borides, *Nitrides, *Carbides, *Chemical bonds, Niobium, Spectrographic analysis, X-ray spectroscopy, Molecular structure, X-rays, Electron tubes, Fluoroscopes.

The spectral lines of the fluorescent L-spectrum of niobium in the compounds NbN, NbC, NbB_2 and in pure niobium were determined. The intensity and shape of the L_{α_1}, L_{β_1}, L_{β_3}, L_{β_4} lines vary insignificantly, whereas the intensity and shape of the L_{β_2} and L_{γ_1} bands undergo sharp changes. The L_{β_2} and $L_{\gamma 1}$ bands of niobium in compounds prove to be only a portion of the corresponding bands of pure niobium. The "truncation" of portions of the bands is a consequence of the fact that a portion of the electrons leaves the orbits. (Author)

Natta, G.
THE GEOMETRICAL FORM OF THE HELICAL CHAINS OF CRYSTALLINE ISOTACTIC POLYMERS. 13p. 6 refs. MTWL: 853[1].
Order from OTS or ETC $1.85 61-17346

Trans. of Accademia Nazionale dei Lincei. Attl. Classe di Scienze Fisiche, Matematiche e Naturale. Rendiconti (Italy) 1955, ser. 8, v. 19, P. 453-459.

DESCRIPTORS: *Polymers, Crystals, *Molecular structure, Geometry.

Sevchenko, A. N. and Stepanov, B. I.
DE INFRAROOD SPECTRA VAN ENIGE URANYL ZOUTEN (Infrared spectra of uranyl salts) 15p. 2 refs. MTWL: 357. (Text in Dutch).
Order from OTS or ETC $1.85 61-17525

Trans. of Zhurnal Eksperimental'noĭ i Teoreticheskoĭ Fiziki (USSR) 1949, v. 19, no. 12, p. 1113-1120.

DESCRIPTORS: *Uranium compounds, Salts, *Infrared spectroscopy.

Shatenshteĭn, A. I. and Izrailevich, E. A.
ABSORPTION SPECTRA OF SOLUTIONS OF COMPLEXES OF NITRO AND AZO COMPOUNDS WITH POTASSIUM IN LIQUID AMMONIA. 19p. 21 refs. MTWL: 591.
Order from OTS or ETC $1.85 61-17286

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1952, v. 26, no. 3, p. 377-388.

DESCRIPTORS: *Spectrographic data, Absorption, Complex compounds, Nitro radicals, AZO radicals, Potassium compounds, Amides, Ammonia, Liquified gases.

Zalkind, Yu. S. and Belikova, M. V.
DE STRUCTUUR VAN ENIGE DIPHENYL-POLYCHLORIDEN (Structure of several polychloro derivatives of biphenyl) tr. by J. H. van Santen. 5p. 5 refs. MTWL: 714. (Text in Dutch).
Order from OTS or ETC $1.40. 61-17317

Trans. of Zhurnal Obshcheĭ Khimii (USSR) 1938, v. 8, no. 18, p. 1918-1921.

DESCRIPTORS: *Phenylradicals, *Chlorine compounds, Structures.

Optics

Bol'shakova, L. G., Georgievski, Yu. N. and others
PHOTOELECTROMETRIC STUDY OF THE NIGHT SKY LUMINESCENCE, tr. by E. R. Hope. 6p. 2 refs. MTWL: 925
Order from OTS or ETC $1.55 61-17583

Trans. of Mezhdunarodnyĭ Geofizicheskiĭ God. Informatsionnyĭ Byulleten' (USSR) 1958, no. 4, p. 58-59.

DESCRIPTORS: *Luminescence, *Night sky, Electrometers, Photoelectric effect.

Chudakov, A. E.
PHOTON RESEARCH CONDUCTED BY MEANS OF THE THIRD ARTIFICIAL EARTH-SATELLITE, tr. by E. R. Hope. 7p. MTWL-924.
Order from OTS or ETC $1.55 61-17584

Trans. of Priroda (USSR) 1958, v. 12, p. 88-90.

DESCRIPTORS: *Satellites, Earth, *Photons, Luminescence, Radiation counters, *Telemetering.

Demushkin, A. I.
A PHOTOELECTRIC INSTALLATION FOR DIRECTING AND GUIDING OPTICAL INSTRUMENTS AT A TARGET. 3 Oct 61 [4]p. MCL-1199/1+2. AD-265 689
Order from OTS or SLA $1.10 61-28979

Unedited rough draft trans. of Byulleten' Izobretenii (USSR) 1960, no. 9, p. 41 (USSR [patent appl.] announcement no. 624224/26, 6 Apr 59).

DESCRIPTORS: Targets, Position finding, *Photoelectric target seekers, *Optical instruments, Instrumentation, Direction finding.

The installation consists of a modulator, a photoelectronic transducer, an electric frequency amplifier, a phase-frequency detector, electrical indicators, and a guiding device. It is characterized in that, in order to increase the accuracy of direction at a target and guiding to the target, and to eliminate the effect of extraneous light, the modulator of this installation is made in the form of two mutually perpendicular opaque oscillating cross hairs located in the focal plane of the optical instrument.

Günther, M.
ILLUMINATION ENGINEERING, LIGHT SOURCES, LIGHTS AND ACCESSORIES. [1961] 16p. (11 figs. omitted) 93 refs.
Order from SLA $1.60 62-10369

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1952, v. 94, no. 19, p. 655-659.

DESCRIPTORS: *Electrical engineering, *Illumination, *Light, Sources, Electrical equipment, *Xenon lamps, *Mercury lamps, Optical filters.

Khomaza, V. F. and Vasil'ev, V. P.
A LIGHT RANGE FINDER WITH SERVOSYSTEM AND AN INTEGRATING FREQUENCY METER. 20 Nov 61 [6]p. FTD-TT-61-214. AD-267 725.
Order from OTS or SLA $1.10 62-15188

Unedited rough draft trans. of #Byulleten' Izobretenii (USSR) 1960, no. 22, p. 38-40 (Russian patent 133611).

DESCRIPTORS: *Range finding, *Optical equipment, Design, Servo systems, Integrators, Frequency meters, Modulation, Frequency, Light.

A servosystem is used to automatically set a light modulation frequency corresponding to the minimum value of the luminous flux traversing the demodulator, and a computer is used to measure the light modulation frequency. (Author)

Scherzer, O[tto].
SPHERICAL AND CHROMATIC CORRECTION OF ELECTRON LENSES. [1961] 18p. 9 refs.
Order from SLA $1.60 61-20824

Trans. of unidentified German language mono. sent in by The South German Laboratory in Mosbach, n. d.

DESCRIPTORS: *Electron lenses, Electron microscopes, Electron optics, Optical equipment.

The usefulness of the electron microscope at high magnifications is affected by aperture errors and chromatic aberration. Both errors are unavoidable as long as the image forming fields are rotation symmetric, charge free and constant in time. The present study demonstrates that the elimination of any of the three conditions suffices to pave the way to spherical and chromatic correction resulting in a worthwhile increase of the resolving power. (Author)

Spivak, G. V. and Rosenfeld, A. M.
EEN EMISSIE-ELECTRONENMICROSCOOP MET GROOT OPLOSSEND VERMOGEN (An emission electron microscope with high resolving power) tr. by K. Compaan. 10p. (foreign text included). 3 refs. MTWL: 698. (Text in Dutch).
Order from OTS or ETC $1.55 61-17341

Trans. of Akademiya Nauk SSSR. Izvestiya. 1951, v. 15, p. 317.

DESCRIPTORS: *Electron microscopes.

Vorob'ev, Yu. V.
EEM METHODE VOOR DE NUMERIEKE INTEGRATIE VAN EEN KLASSE VAN VERGELIJKINGEN UIT DE MATHEMATISCHE PHYSICA; TOEPASSING OP PROBLEMEN UIT DE ELECTRONENOPTIEK (Metod chislennogo integrirovaniya odnogo klassa uravnenii matematicheskoi fiziki i ego primenenie k zadacham elektronnoi optiki) (A method of numerical integration of a class of equations of mathematical physics and its application to problems of electron optics) tr. by J. H. van Santen. 18p. (foreign text included). 3 refs. MTWL: 722). (Text in Dutch).
Order from OTS or ETC $1.85 61-17307

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1952, v. 22, no. 7, p. 1166-1173.

DESCRIPTORS: *Electron optics, Mathematical analysis, Numerical analysis, Integration, Equations.

Zavoiskii, E. K. and Fanchenko, S. D.
THE INVESTIGATION OF ULTRAFAST LIGHT PROCESSES. 5p. 3 refs. MTWL: 978.
Order from OTS or ETC $1.40 61-17540

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100, no. 4, p. 661-663.

DESCRIPTORS: Light, Sparks, *Electric discharge, *Photometers, Illumination, Analysis.

Zavoĭskiĭ, E. K., Smolkin, G. E. and others.
THE LUMINESCENT CHAMBER. 5p. 2 refs.
MTWL: 980.
Order from OTS or ETC $1.40 61-17542

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100, no. 2, p. 241-242.

DESCRIPTORS: *Ionization chambers, *Luminescence, Construction.

Zuev, V. E., Elyashberg, M. E., and Safonova, G. A.
TRANSMITTANCE OF THIN ATMOSPHERIC LAYERS IN THE 1-13 MICRON RANGE. 17 Aug 61 [11]p. 3 refs. MCL-1217/1+2.
Order from OTS or SLA $1.60 61-28701

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 5, p. 77-81.

DESCRIPTORS: *Infrared radiation, Attenuation, Water, *Atmosphere, Gases, Absorption, Vapors, Carbon dioxide, Instrumentation, Infrared spectroscopy, Prisms (Optics), *Wave transmission, Transmission, Optics.

The problem of the applicability of the exponential law and the square-root law to describe the attenuation of infrared radiation is considered for layers of water 10^{-5} to 10^{-3} cm thick. Quantitative data are obtained for the spectral and integral transmittance of thin atmospheric layers (up to 3 m) in the 1 to 13μ range. (Author)

Solid State Physics

ZEVENDE INTERREPUBLIKEINSE CONFERENTIE OVER DE EIGENSCHAPPEN VAN HALFGELEIDERS (Seventh interrepublican conference on the properties of semiconductors) tr. by K. Compaan. 4p. MTWL: 700 (Text in Dutch).
Order from OTS or ETC $1.40 61-17343

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1951, v. 21, p. 231.

DESCRIPTORS: *Semiconductors, Electricity, Conductivity.

Anikina, L.I.
DE INVLOED VAN DE "UITLICHTENDE" WERKING VAN EXCITEREND LICHT OP HET RENDEMENT DER FOSFORESCENTIE (Effect of the emitting action of the exciting light on the yield of phosphorescence) tr. by K. Compaan. 8p. (foreign text included). 7 refs.
MTWL: 696. (Text in Dutch).
Order from OTS or ETC $1.55 61-17339

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 88, p. 41-44.

DESCRIPTORS: *Phosphorescence, Theory.

Arkhangel'skaya, V. A.
INFRARED EMISSION BAND AND THE KINETICS OF SEMICONDUCTOR PROCESSES IN CADMIUM-SULFIDE IN THE TEMPERATURE REGION OF QUENCHING OF LUMINESCENCE. 5p. 5 refs.
MTWL: 981.
Order from OTS or ETC $1.40 61-17543

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100, no. 2, p. 233-235.

DESCRIPTORS: Cadmium compounds, Sulfides, *Semiconductors, Infrared spectroscopy, *Luminescence.

Chaudron, G. and Michel, A.
THERMOMAGNETIC CHARACTER OF THE CUBIC IRON SESQUIOXIDE. [1961] 2p.
Order from SLA $1.10 61-20996

Trans. of an unidentified article, n. p., n. d.

Portions of this report will not reproduce well.

DESCRIPTORS: *Iron compounds, *Sulfur, *Oxides, Heating, Crystallization, Magnetic properties, *Ferromagnetic materials, Lattices, Magnetite, Stability, Alkaline earth metals, Dissociation, Dehydration, Ionization.

Fischer, Albrecht.
THIN SEMICONDUCTING FILMS ON GLASS. [1961] 7p. 7 refs.
Order from SLA $1.10 62-10207

Trans. of Z[eitschrift für] Naturforsch[un]g (West Germany) 1954, v. 9a, p. 508-511.

DESCRIPTORS: *Glass, *Thin films, *Semiconducting films, Solid state physics.

Gross, E. F. and Yakobson, M. A.
GECOMPLICEERDE STRUCTUUR VAN DE FUNDAMENTELE ABSORPTIEKANT VAN EEN CdS KRISTAL (Complex Structure of the Region of Principal Absorption of a Crystal of Cadmium Sulfide) tr. by J. J. Engelsman. (foreign text included). 9p. 8 refs.
MTWL: 855. (Text in Dutch).
Order from OTS or ETC $1.55 61-17615

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 102, p. 485-488.

DESCRIPTORS: *Cadmium compounds, Sulfides, Absorption, *Single crystals, *Spectrographic analysis.

Gubanov, A. I.
DE THEORIE VAN HALFGELEIDERS MET GEMENGDE GELEIDING (Theory of semiconductors with mixed conductivity) tr. by J. H. van Santen. 16p. 7 refs.
MTWL: 718. (Text in Dutch).
Order from OTS or ETC $1.85 61-17321

Trans. of Zhurnal Eksperimental'noĭ Teoreticheskoĭ Fiziki (USSR) 1951, v. 21, no. 11, p. 79-87.

DESCRIPTORS: *Semiconductors, Theory, Conductivity

Gubanov, A. I.
DE THEORIE VAN HET CONTACT METAAL-HALFGELEIDER BIJ GROOT CONTACT POTENTIAAL VERSCHIL (Theory of the contact of a metal and a semiconductor with large contact difference of potential) tr. by P. Schilperoord. 18p. (foreign text included). 6 refs. MTWL: 720. (Text in Dutch).
Order from OTS or ETC $1.85 61-17323

Trans. of Zhurnal Eksperimental'noĭ i Teoreticheskoĭ Fiziki (USSR) 1952, v. 22, no. 2, p. 204-213.

DESCRIPTORS: *Semiconductors, Metals, Electric potential, Theory.

Gubanov, A. I.
THEORIE VAN HET CONTACT VAN TWEE HALFGELEIDERS MET EEN GEMENGD GELEIDINGSVERMOGEN (Theory of a contact of two semiconductors with mixedtype conductivity) tr. by J. H. van Santen. 17p. (foreign text included). 4 refs. MTWL: 719. (Text in Dutch).
Order from OTS or ETC $1.85 61-17322

Trans. of Zhurnal Eksperimental'noĭ Teoreticheskoĭ Fiziki (USSR) 1951, v. 21, no. 6, p. 721-730.

DESCRIPTORS: *Semiconductors, Conductivity, Theory, Rectifiers.

Hornbogen, Erhard.
SEPARATION OF IRON-MOLYBDENUM AND IRON-TUNGSTEN SOLID SOLUTIONS (Entmischung von Eisen-Molybdän- und Eisen-Wolfram-Mischkristallen). [1961] [35]p. (foreign text included) 35 refs.
Order from SLA $3.60 61-20073

Trans. of Z[eitschrift für] Metallk[un]de (West Germany) 1961, v. 52, no. 1, p. 47-56.

DESCRIPTORS: Separation, *Iron, *Molybdenum, *Tungsten, Solids, Solutions, Decomposition, Lattices, Particles, Precipitation, Temperature, Hardness, Crystal structure, Alloys, Metallurgical analysis.

A special type of discontinuous decomposition has been found in supersaturated solid solutions of iron and molybdenum or tungsten. Starting from various lattice defects, a finely divided mixture of equilibrium phases grows into the supersaturated solution. The mean particle distance is independent of the precipitation temperature. The hardness is inversely proportional to the particle distance. The mechanism of this reaction is discussed. (Author)

Ikornikova, N. Yu. and Popova, A. A.
KRISTALLOGRAFIE (Crystallography) 4p. MTWL: 904 (text in Dutch).
Order from OTS or ETC $1.40 61-17613

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 106, no. 3, p. 460-461.

DESCRIPTORS: *Corundum, *Single crystals, Stresses, Synthesis.

Jaoul, B.
WORK HARDENING OF POLYCRYSTALLINE IRON AND A HYPOTHESIS FOR THE ORIGIN OF YIELD POINT ELONGATION. [1961] [44]p. 27 refs.
Order from SLA $4.60 61-20274

Trans. from Journal of the Mechanics and Physics of Solids (Gt. Brit.) 1961, April.

DESCRIPTORS: *Iron, *Single crys als, *Plasticity, Metals, Deformation, Steel, Grains (Metallurgy), Crystals, Dislocations, Shear stresses, Impurities, Rotating structures.

Junod, P.
RELATIONS BETWEEN THE CRYSTALLINE STRUCTURE AND THE ELECTRONIC PROPERTIES OF COMPOUNDS Ag_2S, Ag_2Se, Cu_2Se. [1961] 37p. (24 figs. refs. 3 tables formulae omitted).
Order from SLA $3.60 62-10343

Trans. of Helv[etic]a Physica Acta (Switzerland) 1959, v. 32, p. 567-600.

DESCRIPTORS: *Silver compounds, *Copper compounds, *Sulfides, *Selenides, *Semiconductors, Crystal structure, Electrical properties, Electrical conductance, Hall effect, Optics, Magnetic susceptibility, Thermoelectricity, Voltage.

The compounds Ag_2S, Ag_2Se and Cu_2Se were prepared and purified by zone melting. Measurements of electric conductivity, of the Hall effect and thermoelectric voltages showed that in the lower crystalline phase β, Ag_2S and Ag_2Se are intrinsic semiconductors for which there were determined the parameters of the activation energy ΔE, the mobilities μ and the effective mass. At temperatures above T_e (modification α) Ag_2S and Ag_2Se have the properties of a metal of low electronic concentration. A detailed study of the Brillouin zones has made it possible to explain this behavior. The compound Cu_2Se cannot be prepared in a stoichiometric manner, also the specimens of this substance have a conduction of a metallic character. (Author)

Kefer, N. P., Roginskiĭ, S. Z., and Sazonova, I. S.
ELECTRONIC PHENOMENA IN SEMI-CONDUCTOR CATALYSIS. CATALYTIC ACTIVITY OF NICKELOUS OXIDE AS INFLUENCED BY ADMIXTURES DISSOLVED IN ITS LATTICE. 7p. 4 refs. MTWL: 846.
Order from OTS or ETC $1.55 61-17354

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 106, no. 5, p. 859-861.

DESCRIPTORS: *Semiconductors, Catalysis, Electrons, Nickel compounds, Oxides.

Ksenzhek, O. S. and Stender, V. V.
DETERMINATION OF THE SPECIFIC SURFACE AREA OF POROUS ELECTRODES BY CAPACITY MEASUREMENT METHODS. 9p. 11 refs. MTWL: 844.
Order from OTS or ETC $1.55 61-17352

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 106, no. 3, p. 487-490.

DESCRIPTORS: Porous materials, *Electrodes, Determination, Surfaces, Measurement, Electrostatic capacitance.

Kurov, G. A.
ON THE MECHANISM OF THE GROWTH OF GERMANIUM MONOCRYSTALS FROM A MOLECULAR BEAM. 29 Sep 61 [12]p. 14 refs. USASIA Trans. Log no. 1239-S.
Order from OTS or SLA $1.60 61-28657

Trans. from #Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 6.

DESCRIPTORS: *Germanium, *Single crystal, Crystals, Growth, Crystal structure, Lattices, Molecular beams.

The article examines some properties of the growth of a monocrystal layer of germanium on a facet of similar monocrystal during condensation from a molecular beam. It is demonstrated that, in the conventional laboratory experiment, the conditions of growth of a monocrystal are the equivalent of 25 to 30-multiple effective supersaturation of steam. The article adduces estimates of the critical radius of a two-dimensional nucleus and the formation rate of "viable" nuclei. A hypothesis is advanced concerning the mechanism of defect formation in the growth of the monocrystal. Methods of achieving a layer with a more perfect structure are indicated. (Author)

Larikov, L. N.
GROWTH OF CRYSTALS IN THE SOLID PHASE. [1960] 11p. 34 refs. MDF L-135.
Order from OTS $0.50 62-11491

Trans. of [Akademiya Nauk URSR, Kiev. Institut Metallofiziki. Sbornik Nauchnykh Rabot] 1959, no. 10, p. 111-120.

DESCRIPTORS: *Metallic crystals, Crystals, Growth, Solids, Theory

An analysis is given of the fundamental theories of the growth of crystals and discussion of the conditions of their applicability to processes in the solid phase.

Larikov, L. N.
INFLUENCE OF SOLUBLE IMPURITIES OF THE LINEAR GROWTH RATE OF RECRYSTALLIZATION CENTERS. [1960] 10p. 34 refs. MDF L-136.
Order from OTS $0.50 62-11490

Trans. of [Akademiya Nauk URSR, Kiev. Institut Metallofiziki. Sbornik Nauchnykh Rabot] 1959, no. 10, p. 121-129.

DESCRIPTORS: *Metallic crystals, Crystals, Impurities, Growth, Crystallization.

A review of the literature shows that a strong delay in recrystallization occurs under the effect of slight doping admixtures, which cannot be reduced to their effect on the total level of the diffusion mobility of atoms in the lattice of the basic metal. This phenomenon is related to the nonuniform distribution of the elements in the volume of the deformed alloy. An analysis shows that noncoherent strongly disoriented boundaries are enriched by impurities whose atoms produce significant static distortions in the lattice of the basic metal. The presence of a sublayer enriched by impurity atoms around a growing recrystallization center can lead to a substantial change in its linear growth rate.

Luzhnaya, N. P.
PHYSICAL CHEMICAL ANALYSIS OF SEMICONDUCTORS. [1960] 14p. 86 refs. MDF L-138.
Order from OTS $0.50 62-11489

Trans. of Vses[oyuznoe] Khim[icheskoe] Ob[shchestvo]. Zh[urnal] (USSR) 1960, v. 5, no. 5, p. 562-568.

DESCRIPTORS: *Semiconductors, Analysis, Physical chemistry, Phase studies, History, Bibliography

A literature survey

Natta, G., and Corradini, P.
THE CRYSTAL STRUCTURE OF ISOTACTIC POLYSTYRENE. 13p. 6 refs. MTWL: 851.
Order from OTS or ETC $1.55 61-17359

Trans. of Accademia Nazionale dei Lincei. Atti. Classe di Scienze Fisiche, Matematiche e Naturali. Rendiconti (Italy) 1955, ser. 8, v. 18, p. 19-27.

DESCRIPTORS: *Styrenes, Polymers, *Crystal structure, X-Ray diffraction analysis.

Natta, G., Corradini, P., and Bassi, I. W.
CRYSTALLINE STRUCTURE OF SOME ISOTACTIC POLY-α-OLEFINS. 14p. 6 refs. MTWL: 855/1.
Order from OTS or ETC $1.85 61-17348

Trans. of Accademia Nazionale dei Lincei. Atti. Classe di Scienze Fisiche, Matematiche e Naturali. Rendiconti (Italy). 1955, ser. 8, v. 19, p. 404-411.

DESCRIPTORS: *Polymers, *Ethylene, Crystal structure, X-Ray diffraction analysis.

Nemnonov, S. A.
HEXAGONAAL CHROOM EN DE STRUCTUUR VAN ELECTRISCH AFGESCHEIDEN CHROOM (Nature of Hexagonal Chromium and Structure of Electrolytic Chromium Deposits) tr. by J.H. van Santen. 10p. MTWL: 898. (text in Dutch).
Order from OTS or ETC $1.55 61-17607

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1948, v. 18, p. 239-246.

DESCRIPTORS: *Chromium, Electricity, Metallurgy, *Crystal structure.

Olshak, V.
ON THE FUNDAMENTALS AND APPLICATIONS OF THE THEORY OF HETEROGENEOUS ELASTIC-PLASTIC MEDIA, tr. by Donald Rich. 6 Oct 61 [33]p. 25 refs. ARGMA Trans. nr. 59-61.
Order from OTS or SLA $3.60 61-28836

Trans. of Akad[emiya] Nauk SSSR. Otdelenie Tekh[nicheskikh] Nayk. Izvestiya, 1957, no. 8, p. 20-34.

DESCRIPTORS: *Plasticity, *Elasticity, Cylindrical bodies, Elastic shells, Metals, Stresses, Deformation

The theory of heterogeneous elastic-plastic bodies is applied to the problem of an heterogeneous, hollow, eccentric, cut cylinder and to the adjacent problem of the heterogeneous half-plane with a circular opening. Some of its further applications are briefly examined.

Pekar, S. I.
CRITICISM, PARTIAL FOUNDATION, AND LIMITS OF APPLICABILITY OF THE BAND THEORY OF ELECTRONS IN CRYSTALS [Kritika, Chastichnoe Obosnovanie i Granitsy Primenimosti Zonnoi Teorii Elektronov v Kristallakh]. [1956] 18p. 6 refs.
MDF P-101.
Order from OTS $0.50 62-11519

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1952, v. 22, no. 6, p. 1062-1075.

DESCRIPTORS: *Crystals, Lattices, *Electrons, Theory, Quantum mechanics, Mechanics, Dielectrics, Semiconductors.

Discussions are presented on (1) what is meant by band theory, (2) self-consistent field method, (3) the incorrect application of the self-consistent field method on the basis of band theory, (4) cases of the self-consistent functions of band theory which have physical meaning, (5) variation of band theory not relying on the self-consistent field method, and (6) calculation of the displacement of the atom sites.

Pozdnyakov, P. G.
HET KWEKEN VAN KRISTALLEN VAN LITHIUMSULFAAT (Growth of Crystals of $Li_2SO_4H_2O$) 8p.
MTWL: 901. (text in Dutch).
Order from OTS or ETC $1.55 61-17610

Trans. of Kristallografiya (USSR) 1956, v. 1, no. 3, p. 356-359.

DESCRIPTORS: *Lithium compounds, Sulfates, Crystals, *Crystallization.

Rekalova, G. I.
DE FOTOGELEIDING VAN AURIPIGMENT As2S3, IN STERKE ELECTRISCHE VELDEN (Photoconductivity of auripigment As2S3 in strong electric fields) tr. by J. H. van Santen. 8p. (foreign text included). 4 refs.
MTWL: 703. (Text in Dutch).
Order from OTS or ETC $1.55 61-17326

Trans. of Zhurnal Tekhnicheskoĭ Fiziki (USSR) 1951, v. 21, no. 9, p. 1041-1044.

DESCRIPTORS: Electric fields, *Photoconductivity, *Arsenic compounds, Sulfides.

Savintsev, P. A., Avericheva, V. E., and Kostyukevich, M. V.
RATE OF CONTACT FUSION OF ALKALI METAL-HALIDE CRYSTALS. 13 Nov 61[8]p. 7 refs.
FTD-TT-61-66. AD-267 718.
Order from OTS or SLA $1.10 62-13578

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 4, p. 107-109.

DESCRIPTORS: *Alkali metal compounds, *Halides, *Crystals, Temperature, Melting, Fused materials, Powder metals.

The rate of contact fusion of alkali metal-halide crystals NaCl-KI, KI-KCl, KI-NaBr is related to temperature by the exponential law. Melts obtained as a result of contact fusion of KI-NaBr crystals at different temperatures have similar compositions. (Author)

Schoeneck, H.
MEASURING THE DENSITIES OF SOLIDS. [1961] 14p. 10 refs.
Order from SLA $1.60 62-10055

Trans. of Archiv für Technisches Messen [und Industrielle Messtechnik] (West Germany) 1956, v. 247, no. V 9111-1 [p. 175-178].

DESCRIPTORS: *Solids, Density, Measurement, Structures, Mathematical analysis, Instrumentation.

Trlifaj, M.
DE POLARISEERBAARHEID VAN F- EN F'- CENTRA IN IONENROOSTERS (Polarizability of the F and F' centres within ionic crystals) tr. by J. H. van Santen. 23p. 10 refs. MTWL: 691. (Text in Dutch).
Order from OTS or ETC $1.89 61-17334

Trans. of Czechoslovak Journal of Physics 1953, v. 3, no. 4, p. 267-281.

DESCRIPTORS: *Crystals, Ions, Dielectrics, *Polarization.

Theoretical Physics

Aitmurzaev, T.
THE PROBLEM OF ONE DIMENSIONAL NONSTEADY GAS FLOW IN THE GENERAL THEORY OF RELATIVITY, TAKING DISSIPATIVE PROCESSES INTO ACCOUNT. 23 Oct 61 [11]p. 6 refs. FTD-TT-61-118.
Order from OTS or SLA $1.60 AD-265 813 62-13059

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 6, p. 13-19.

DESCRIPTORS: *Gas flow, *Relativity theory, Numerical methods and procedures, Differential equations, Taylor's series.

It is assumed that the initial line in space (r, t) is a parabola $t = ar^2$. Two cases are treated under these assumptions: (a) when the speed of light is considered to be unity in the center of mass for all times; and (b) when the speed of light is arbitrarily given along the initial line (the Cauchy problem). The problem is solved using the power-series method. (Author)

Kessenikh, V. N.
COHERENT DIFFUSION IN PLASMA (ELECTRONIC GAS) (Kogerentnoe Rasseyanie v Plazme) tr. by J. K. Lyons. 10 Aug 61, 4p. 2 refs. H-9280.
Order from OTS $0.50 61-31644

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 1] p. 234-235.

DESCRIPTORS: *Plasma physics, Electrons, Scattering, Radiation, Diffusion, Plasma oscillations, Density Dipole moments, Frequency, Cyclotrons, Integrals

The condition of the appearance of a secondary field with a stationary or a slowly-changing complex amplitude is analyzed for the case when $\omega_p/\omega \ll 1$ and $\omega_H/\omega \ll 1$. Here ω_p is the plasma frequency and ω_H is the cyclotron frequency.

Laue, M.
TWO OBJECTIONS TO THE THEORY OF RELATIVITY AND THEIR REFUTATION. [1960] 4p. 6 refs. MDF L-127.
Order from OTS $0.50 62-11494

Trans. of Phys[ikalische] Z[eitschrift] (Germany) 1912, v. 13, p. 118-120.

DESCRIPTORS: *Relativity theory, Time, Chronographs

Objections by Berg and by Wiechert involving the "clock paradox" are discussed. (See also 62-15384)

Lebedev, L. E.
SINGULAR SOLUTIONS OF THE SPINOR EQUATION AND ELECTRON THEORY, tr. by Morris D. Friedman. Feb 61 [12]p. 5 refs. AFCRL 57; MDF L-137. AD-255 674.
Order from OTS $0.50 62-11488

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 4, p. 22-29.

DESCRIPTORS: *Quantum mechanics, *Electrons, Theory, Partial differential equations

On the basis of a new representation of the nature of the ψ-function, the Dirac equation is generalized for a free electron. The source of a ψ-field is introduced. A solution of this equation is constructed and certain of its properties are investigated. A number of new results has been obtained: the "classical" convergence of the intrinsic electron energy; the existence of specific energy of the quantum bond and the presence of an excited (virtual) electron level. Corollaries are formulated which result from the possibility of extending the conception proposed to proton theory. (Author)

Lyubimov, G. A.
INVESTIGATION OF STATIONARY SURFACES OF DISCONTINUITY WITH A JUMP IN THE GAS CONDUCTIVITY IN AN ELECTROMAGNETIC FIELD. [1959] 10p. 8 refs. MDF L-128.
Order from OTS $0.50 62-11495

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: M[ekhanika] i M[ashinostroenie] 1959, no. 5, p. 9-15.

DESCRIPTORS: *Electromagnetic fields, *Gases, Conductivity, *Gas flow, Surfaces, Magnetohydrodynamics, Plasma physics.

Stationary surfaces of discontinuity are analyzed on which there is a discontinuity in the gas conductivity in addition to the discontinuity in the thermodynamic flux and velocity parameters. (Author)

Thermodynamics

Alekseev, V. P. and Martynovskiĭ, V. S.
INFLUENCE OF VORTEX TEMPERATURE DISTRIBUTION OF SUPERHEATED VAPOURS AND EXPERIMENTAL VERIFICATION OF THE HILSCH-FULTON HYPOTHESIS. 13p. 15 refs. MTWL: 850.
Order from OTS or ETC $1.85 61-17358

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1956, no. 1, p. 71-79.

DESCRIPTORS: Vapours, *Hilsch tubes, Ammonia, Carbon dioxide, Methanes, *Joule-Thomson effect.

Charnyĭ, I. A.
METHODS FOR THE LINEARIZATION OF NONLINEAR HEAT CONDUCTIVITY EQUATIONS. 15p. 2 refs. MTWL: 593.
Order from OTS or ETC $1.85 61-17288

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskaya Nauk. Izvestiya, 1951, no. 6, p. 829-838.

DESCRIPTORS: *Non-linear differential equations, Heat transfer, Gas flow, Porous Materials, Fluid flow.

Goldenberg, S. A.
EDDY DIFFUSION PHENOMENA IN HEAT EXCHANGE, DIFFUSION AND CHEMICAL PROCESSES. 10p. 9 refs. MTWL: 587.
Order from OTS or ETC $1.55 61-17302

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk, Izvestiya, 1950, no. 5, p. 689-694.

DESCRIPTORS: Chemical engineering, *Diffusion, Heat transfer, Boundery layer.

Kolchenogova, I. P. and Shorin, S. N.
RESEARCH ON RADIANT ENERGY TRANSFER IN AN ABSORBING MEDIUM. [1961] [25]p. 5 refs.
Order from OTS or SLA $2.60 61-20718

Trans. of Akademiya Nauk SSSR. O[tdelenie] Tekhn[icheskikh] Nauk. Izvest[iya] 1956, no. 5, p. 29-[39].

DESCRIPTORS: *Heat transfer, Energy, Electromagnetic waves, *Light, *Diffusion theory, Absorption, Heat exchangers, Optics.

A first attempt was made to verify experimentally the application of diffusion theory of light transfer to the

transfer of radiant energy in an absorbing medium. Solutions of one dimensional and two dimensional problems of radiant energy in an absorbing medium were verified by light models, Experiments were made in absorbing media with a wide range of optical thicknesses. The Buger number (kℓ) was varied during the experiments approximately from 0. 3 to 33., i.e. more than a hundred times. The experimental data obtained for all models with media of various optical densities are completely in agreement with theoretical solutions. This is a reliable confirmation of the possibility and advisability of applying the gradient representation of the radiant flux vector to the solution of problems of radiant energy transfer in absorbing media. (Author)

Lavrova, V.
EXPERIMENTAL INVESTIGATION OF HEAT TRANSFER OF BOILING FREON 12 (Eksperimental'noe Issledovanie Teplootdachi pri Kipenii Freona-12). Sep 61 [19]p.
Order from OTS or SLA $1.60 61-20878

Trans. of Scientific Investigation Works [sic] (USSR) no. 3, p. 55-61.

DESCRIPTORS: *Heat transfer, Boiling, Convection, Bubbles, Liquids, Thermocouples, Specific heat, *Refrigeration systems, Heat exchangers.

Sokolik, A. S.
ON THE MECHANISM OF THE PRE-DETONATION ACCELERATION OF A FLAME. 22p. 15 refs. MTWL: 590.
Order from OTS or ETC $1.89 61-17305

Trans. of Zhurnal Eksperimental'noĭ i Teoreticheskoĭ Fiziki (USSR) 1951, v. 21, no. 10, p. 1164-1175.

DESCRIPTORS: Flames, Acceleration, *Detonation waves, *Shock waves, Shock tubes.

Zhdanov, A. K.
HEAT CAPACITIES OF SOME PURE LIQUIDS AND AZEOTROPIC MIXTURES. [1961] [7]p. 3 refs.
Order from OTS or SLA $1.10 61-20149

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 895-901.

DESCRIPTORS: *Alcohols, *Acetates, *Ethyl radicals, *Carbon compounds, *Sulfides, Liquids, Mixtures, Thermodynamics, Tables.

Heat capacities under constant pressure were determined of isopropyl alcohol, isoamyl alcohol, ethyl acetate, carbon disulfide and the following azeotropic mixtures: (1) benzene-isopropyl alcohol, (2) benzene-isobutyl alcohol, (3) carbon disulfide-acetone, (4) carbon disulfide-methyl ethyl ketone, (5) carbon disulfide-isopropyl alcohol, (6) carbon disulfide-ethyl acetate, (7) carbon tetrachloride-methyl ethyl ketone, (8) carbon tetrachloride-ethyl acetate, and (9) chloroform-ethyl formate. For all liquids the values of the second derivative of the thermodynamic potential with respect to temperature were determined. (Author)

Wave Propagation

Brekhovskikh, L. M.
DE DIFFRACTIE VAN GOLVEN OP EEN ONGELIJKMATIG OPPERVLAK (Diffraktsia Voln na Nerovnoĭ Poverkhnosti) (Diffraction of waves on a rough surface) tr. by G. B. J. Overbeek. 40p. 5 refs. MTWL: 817. (Text in Dutch).
Order from OTS or ETC $2.40 61-17391

Trans. of Zhurnal Eksperimental'noĭ i Teoreticheskoĭ Fiziki (USSR) 1952, v. 23, no. 3 (9), p. 275-304.

DESCRIPTORS: *Sound, *Electromagnetic waves, *Diffraction, Surfaces, Theory.

Isakovich, M. A.
DE DIFFRACTIE VAN GOLVEN TEGEN EEN STATISTISCH RUW OPPERVLAK (Rasseyanie Voln ot Statisticheski-sherokhovatoĭ Poverkhnosti) (Scatter diffraction of waves on a statistically rough surface) tr. by G.B.J. Overbeek. 18p. 10 refs. MTWL; 818. (Text in Dutch).
Order from OTS or ETC $1.85 61-17392

Trans. of Zhurnal Eksperimental'noĭ i Teoreticheskoĭ Fiziki (USSR) 1952, v. 23, no. 3 (9), p. 305-314.

DESCRIPTORS: *Sound, *Electromagnetic waves, *Diffraction, Surfaces, Theory.

Kalinin, A. I.
ON THE EARTH'S INFLUENCE ON LONG-RANGE TROPOSPHERIC ULTRASHORT WAVE PROPAGATION. 27 Sep 61 [11]p. 5 refs. USASIA Trans. Log no. 1238-Z.
Order from OTS or SLA $1.60 61-28656

Trans. from #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 5.

DESCRIPTORS: *Atmosphere, *Radio waves, Propagation, Reflection, Earth, Geophysics.

A solution is given to the problem of determining the mean field strength value in long-range tropospheric propagation of ultrashort waves. This solution is based on the hypothesis of coherent reflection from stratified tropospheric inhomogeneities and the exponential dependence of the dielectric permeability of of the air on the height above the Earth's surface, and takes into account diffraction around the Earth's surface. (Author)

Korkunov, Yu. F.
A METHOD OF TRANSMITTING A SIGNAL OF STANDARD FREQUENCY AND PHASE TO DISTANT POINTS (Sposob Peredachi Signala Etal onnov Chastoty i Fazy v Udalennye Punkty). [1961] [4]p. MCL-1220/1+2.
Order from OTS or SLA $1.10 62-13001

Unedited rough draft trans. of Byulleten' Izobretenii (USSR) 1960, no. 12, p. 24 (USSR [patent appl.] announcement 635973/26, 7 Aug 59).

DESCRIPTORS: *Radio signals, Transmission, Frequency, *Radio transmission.

For the purpose of decreasing the dependence of the phase of the standard signal being received on the propagation conditions, signals of neighboring frequencies are transmitted from two neighboring points (distance comparable with half the wavelength), and their difference frequency is synchronized with a standard signal the difference signal obtained at the receiving end from the two signals received, after introduction of a constant phase shift determined by the distance between the points of transmission and reception and by the parameters of the system, serves as the standard signal.

Lysanov, Yu. P.
OVER HET PROBLEEM VAN DE DIFFUSIE VAN DE ELECTROMAGNETISCHE GOLVEN OP EEN ONGELIJKMATIG OPPERVLAK) (K Voprosu o Rasseyanii Elektromagnitnykh Voln na Nerovnoĭ Poverkhnosti) (The Problem of the Scattering of Electromagnetic Waves on a Rough Surface) tr. by G.J.M. Overbeek. 8p. 3 refs. MTWL: 819. (Text in Dutch).
Order from OTS or ETC $1.55 61-17393

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 87, no. 5, p. 719-722.

DESCRIPTORS: *Electromagnetic waves, *Scattering, Surfaces, Theory.

Petrina, D. Ya.
DISPERSION RELATIONS IN A DIFFRACTION PROBLEM. Oct 59, 10p. 7 refs. AFCRC-TN-59-794; P-137; AD-228 861.
Order from OTS $0.50 62-11508

Trans. of Ukr[ainskii] Mat[ematicheskii] Zh[urnal] (USSR) 1958, v. 10, no. 4, p. 405-412.

DESCRIPTORS: *Electromagnetic waves, Diffraction, Mathematical analysis, Differential equations, Integral equations.

A certain finite region B is given in three-dimensional space. The solution is found of the following problem:

$$\Delta u + k_1^2 u = 0, \quad \bar{x} \in B$$

$$\Delta u + k_0^2 u = 0, \quad \bar{x} \in E - B$$

under the boundary conditions

$$(u)_1 = (u)_0; \quad \left(\frac{\partial u}{\partial n}\right)_1 = \left(\frac{\partial u}{\partial n}\right)_0$$

the symbols $()_1$ and $()_0$ denote the limiting values on the inside and the outside of the boundary B, respectively. The solution is sought as the sum of an incident wave $\exp(ik_0\bar{x})$ and a wave which occurs because of diffraction in the region B and which damps at infinity. The latter requirement leads to the so-called radiation condition. (Author)

Prilmak, G. I.
CORRELATION FUNCTION OF A SIGNAL PASSING THROUGH A MEDIUM WITH RANDOMLY MOVING INHOMOGENEITIES, tr. by Morris D. Friedman. Jan 61 [16]p. 3 refs. AFCRL 19: MDF P-157; AD-252 208.
Order from OTS $0.50 62-11501

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1960, v. 3, no. 5, p. 778-788.

DESCRIPTORS: Signals, *Correlation techniques, *Radio waves, Propagation, *Acoustics, *Sound transmission, *Radio transmission, Mathematical analysis, Statistical functions.

The problem of the correlation function of a signal passing through a medium with randomly moving inhomogeneities is analyzed. The present analysis is made directly for the acoustic case although it refers, in equal measure, to the radiowave propagation case also. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ADMINISTRATION AND ORGANIZATION OF SOVIET SCIENCE: SELECTED TRANSLATIONS. 14 Nov 61 [52]p. 11 refs. JPRS: 11093.
Order from OTS or SLA $5.60 62-13395

Trans. of Akademiya Nauk Turkmenskoi SSR, Ashkhabad. Izvestiya. Seriya Obshchestvennykh Nauk, 1961, no. 2, p. 100; Sovetskaya Pedogogika (USSR) 1961, v. 25, no. 3, p. 60 and 20 selected articles from May-June 61 issues of 12 Russian newspapers.

DESCRIPTORS: *Science, Research program administration, Scientific organizations, Scientific personnel, Personnel, Chemical industry, Fuels, Shales, Petroleum industry, Machines, Construction materials, Plastics, Economics, Conferences, Encyclopedias, Textbooks, Medical personnel, Tests, Metallurgy, Laboratories.

AT THE INSTITUTIONS OF THE ACADEMY OF SCIENCES USSR. 29 Nov 61 [15]p. JPRS: 11381.
Order from OTS or SLA $1.60 62-13643

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 1, p. 106-119.

DESCRIPTORS: *Chemistry, Astronomy, *Plants, Grinding wheels, *Scientific research, Gases, *Combustion, *Radiochemistry, Atomic energy engineering, Conferences.

Contents:
The General Conference of the Division of Chemical Sciences of the USSR
The Astronomical Council, by N. P. Yerpylev

The Council of Botanical Gardens, by B. V. Lavrov
A Seminar on Highly-Productive Grinding, by T. M. Vlasova
The Scientific Conference on the Problem of Combustile Gases, by V. M. Popov and L. V. Semenov
Means for the development of radiationchemistry, by I. V. Vereshchinskii and P. I. Dolan.

AT THE PRESIDIUM OF THE ACADEMY OF SCIENCES, UKRAINIAN SSR. 3 Oct 61 [7]p. JPRS: 10400.
Order from OTS or SLA $1.10 61-28592

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1961, no. 1, p. 120-122.

DESCRIPTORS: *Encyclopedias, Water, *Water supplies, *Radio, *Electrical engineering, Hydrology

Information is presented on (1) the publication of the Soviet Ukrainian encyclopedia, (2) measures related to regulating the use of and increasing the protection for the water resources of the Ukrainian SSR, and (3) the establishment of the Institute for Problems in Radio Engineering of the AN UkSSR as part of the Section for Technical Sciences of the AN UkSSR in Kiev.

BIOGRAPHIES OF SELECTED SOVIET SCIENTISTS. 29 Nov 61, [22]p. JPRS: 11372.
Order from OTS or SLA $2.60 62-13641

Trans. of 9 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, *Medical personnel, Personnel.

Contents:
Nikolai Grigoryevich Khlopin, Mikhail Vasilevich Khrunichev, V. P. Linnik, A. N. Luzhetskii, Mikhail Sergeevitch Malinovskii, Vasilii Nikitich Matveev, Aleksandr Vasilevich Krylov, Boris Petrovich Sokolov
Timofei Danilovich Strakhov.

BRIEF COMMUNICATIONS. 8 Aug 61 [6]p. MCL-1130/1+2; AD-262 615.
Order from OTS or SLA $1.10 61-28380

Unedited rough draft trans. of #Atomnaya Energiya (USSR) 1960, v. 9, no. 4, p. 347-348.

DESCRIPTORS: *Gas turbines, *Heat transfer, Steam pipes, *Uranium compounds, Oxides, Australia, Congo, *Fast reactors, Great Britain, *Nuclear power plants, India, *Electron accelerators, Canada, Yugoslovia.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 52. 31 Oct 61 [15]p. JPRS: 10808.
Order from OTS or SLA $1.60 62-13691

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 3 (3 reports).

DESCRIPTORS: *Machine translation, Data, Processing, Language, *Coding, Numerical methods and procedures.

Contents:
Coding the Vietnamese syllable, by B. M. Belykh and G. S. Tseitin
An algorithm to abridge German for input into a machine, by I. I. Revzin
The category of voice in an intermediary language, by G. S. Tseitin.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 55. 16 Nov 61 [11]p. 4 refs. JPRS: 11088.
Order from OTS or SLA $1.60 61-31690

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 3, p. 560-565.

DESCRIPTORS: *Machine translation, Data, Processing, Digital computers, Computers, Programming, Mathematical logic, Coding

Contents:
On the tranformation of programs for solving complex logical problems to an optimal form, by S. N. Razumovskii
On alphabetic coding, by A. A. Markov

GENERAL MEETING OF THE ACADEMY OF SCIENCES OF THE UKRAINIAN SSR. 20 Dec 61 [4]p. JPRS: 11751.
Order from OTS or SLA $1.10 62-15209

Trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1961, no. 5, p. 553.

DESCRIPTORS: *Scientific organizations, Conferences, Scientific research

NEWS OF SOVIET CONTROL SCIENCES. 21 Dec 61 [26]p. JPRS: 11549.
Order from OTS or SLA $2.60 62-13657

Trans. from Kommunist, Erevan (USSR) 1961, 13 Aug p. 3; Komsomol'skaya Pravda (USSR) 1961, 16 Aug, p. 2; 14 Sep, p. 4; Sovetskaya Estoniya (USSR) 1961, 17 Aug, p. 2; Pravda Vostoka (USSR) 1961, 23 Aug, p. 3-4; Pravda, Leningrad (USSR) 1961, 29 Aug, p. 2, Kommunist, Tadzhikistana (USSR) 1961, 14 Sep, p. 2; Pravda, Moscow (USSR) 1961, 13 Oct, p. 2.

DESCRIPTORS: Control, *Science, *Cybernetics, Machines, *Automation, Man, Education.

Contents:
Mechanization of accounting, by A. Gulyan
The needs of the brain child of science, by A. Chavchanidze
Educating the new man; the main task, by V. Gomzov and Kh. Seede
Our main task is educating the new man, by N. Solov'eva
In step with the times, by V. V. Parin
The man of the future is being formed today
The living machine, by R. Raikhlin
Automation in the domestic economy, by M. Khasanov
Cybernetics and the living organism, by A. Lyapunov.

SCIENTIA SINICA (CHINESE PEOPLE'S REPUBLIC) 1961, VOL. 10, NO. 7, P. 755-898. Nov 61, 1v. 123 refs.
Order from OTS or SLA $11.50 62-23324

DESCRIPTORS: *Mathematics, Mathematical logic, Integral equations, Algebraic topology, Topology, *Nuclear physics, Physics, Pions, Scattering, Hyperons, *Chemistry, Cucurbitine, Acids, Separation, Molecular structure, Synthesis, *Radiobiology, Mice, Radiation effects, *Neurology, Anatomy, Brain, Trigeminal nerve, *Civil engineering, Beams, Structures, Joints, Periodicals, China

Contents:
N-generalizable, intuitionistic, co-denial pseudo-modal and co-$\mathcal{L}$ systems, by Moh Shaw-kwei, p. 755-789, $3.60 (originally pub. in [Shu Hsüeh Hsüeh Pao] (Chinese Poeple's Republic) 1959, v. 9, no. 4)
On a singular integral equation, by Liang Schih-ting, p. 790-792, $1.10
On a theorem of Leray, by Wu Wen-tsun, p. 793-805, $1.60
Uprugoe rasseyanie protonov s energiei 6,8 MEV na yadrakh Cr. Co, Ni, Cu i Zn, by Chzhou De-lin and others, p. 806-811, $1.10 (originally pub. in [Wu Li Hsüeh Pao] (Chinese People's Republic) 1960, v. 16, no. 7)
The pion-pion scattering at low energy, by A. V. Efremov and others, p. 812-836, $2.60
Up-down asymmetries of Λ- and Ξ-decays, by Ning Hu, p. 837-844, $1.10 (originally pub. in [Wu Li Hsüeh Pao] (Chinese Poeple's Republic) 1961, v. 17, no. 7, p. 315-320)
Chemical studies on Cucurbita moschata Duch. I. The isolation and structural studies of cucurbitine, a new amino acid, by Sheng-din Fang and others, p. 845-851, $1.10
Chemical studies on Cucurbita moschata Duch. II. A synthesis of cucurbitine, by Tsun-tsi Sun and others, p. 852-859, $1.10
A study on the radiosensitivity of mouse during various phases of the oestrous cycle, by Ma Siu-choun, p. 860-866, $1.10
The cerebellar connections of the mesencephalic nucleus of the trigeminus, by Tsang Yu-ch'uan, p. 867-878 and figs, $1.60
The analysis of continuous wedge-beam frames with interjacent hinges. I. Frames having straight wedge-beams with interjacent hinges, by Tsai Fang-yin, p. 879-898, $1.60 (based on paper pub. in [T'u Mu Kung Ch'eng Hsüeh Pao] (Chinese People's Republic) 1960, v. 7, no. 1 and 2, p. 24-35 and 80-95 [sic].

SCIENTIA SINICA (CHINESE PEOPLE'S REPUBLIC) 1961, VOL. 10, NO. 8, P. 899-1060 [AND] SUBJECT AND AUTHOR INDEX TO VOL. 10. Dec 61, 1v. 132 refs.
Order from OTS or SLA $13.00 62-23325

DESCRIPTORS: *Mathematics, Algebraic topology, Topology, *Physics, Solid state physics, Metallic crystals, Crystals, Internal friction, Friction, *Chemistry, Acids, Chemical analysis, *Microbiology, Biology, Potatoes, Virus diseases, *Plants, Physiology, *Soils, Paleoecology, Ecology, Anthropology, *Minerals, *Geophysics, *Civil engineering, Structures, Beams, Joints, Periodicals, Indexes.

Contents:
On a theorem of K. Shiraiwa, by S. C. Chang, p. 899-901, $1.10
Cohomology operations and homotopy types of Δ_H^3-polyhedra, by S. C. Chang, p. 902-905, $1.10
Kraevye zadachi dlya nelineinykh parabolicheskikh uravnenii v oblasti s krivolineinoi granitsei, by Chzhou Yui-lin', p. 906-929, $2.60
##On the mechanism of internal friction peak induced by diffusion of interstitial atoms in face-centred cubic crystal, by Tsien Chih-tsiang, p. 930-937, $1.10
Analysis of binary acid mixtures by extraction, by Ku Ti-ren and Ying Fu, p. 938-961, $2.60 (originally pub. in [Hua Hsüeh Hsüeh Pao] (Chinese People's Republic) 1961, v. 27, no. 2, p. 129-146)
Loss of tolerance to mosaic viruses as the cause of potato degeneration, by Lin Ch'wan-kwang and Tien Po, p. 962-975, $1.60
Quantum requirement of photophosphorylation by isolated chloroplasts, by H. C. Yin and others, p. 976-984, $1.10 (originally pub. in Acta Biochim. Biophys. Sinica [sic] 1961, v. 1, no. 2, p. 67)
On the status of soil potassium and the sequence of transformation of potassium bearing minerals in some important soil types in the red earth region of China, by Ching-kwei Lee and others, p. 985-997, $1.60
On the racial types of the upper cave man of Choukoutien, by Wu Khin-zhi, p. 998-1005 and fig., $1.10
Khuankhit: novyi redkozemel'nyi mineral, by E. I. Semenov and Chzhan Pei-shan', p. 1007-1011, $1.10 (originally pub. in [K'o Hsueh T'ung Pao] (Chinese People's Republic) 1961, no. 6)
Trekhurovennaya model' dlya resheniya nelineinoi zadachi prognoza meteoelementov v sfericheskoi sisteme, by Chzhu Yun'-ti, p. 1012-1039, $2.60
The analysis of continuous wedge-beam frames with interjacent hinges. II. Continuous frames having gable wedge-beams with interjacent hinges, by Tsai Fang-yin, p. 1040-1060, $2.60.
Subject index to v. 10, 1961, p. i-vi, $1.10
Author index to v. 10, 1961, p. vii-xii, $1.10

Another trans. is available from BISI £13 10s as BISI-1397 [1959].

TECHNICAL INFORMATION FROM KUANG MING DAILY, 1959-61: [SELECTED ARTICLES]. 30 Nov 61 [31]p. JPRS: 11241.
Order from OTS or SLA $3.60 62-13554

Trans. from Kuang Ming Jih Pao (Chinese People's Republic) 1959, 4 Jan, p. 2; 13 Jan, p. 3; 25 May, p. 2; 8 June, p. 2; 18 Nov, p. 2; 1960, 9 Feb, p. 4; 1961, 22 Mar, p. 4.

DESCRIPTORS: *Technological intelligence, Scientific intelligence, Universities, China, Communism, Growth.

Contents:
Consolidate Sino-Soviet alliance: strengthen scientific, technical cooperation, by Wang Tung-nien
Peking Industrial College
Wuhan Branch of Academia Sinica completes 101 research projects in two months
Chang-Chun Telecommunications School relies upon itself to solve technical difficulties
Peking Radio School pays attention to labor production
Scientific and technological achievements surpass those of any year in the past
New Years gift presentation meeting at Academia Sinica
How to read scientific signs, symbols and abbreviations, by Liu Chia-sung.

Bloch, E. L.
OVER HET PROBLEEM VAN DE MINIMALE AFLEES-INFORMATIE (The Problem of the Minimum Reading Information) tr. by G.B.J. Overbeek, 11p. 12 refs. MTWL: 962. (Text in Dutch).

Order from OTS or ETC $1.55 61-17523

Trans. of Radiotekhnika (USSR) 1960, v. 15, no. 3.

DESCRIPTORS: Information theory, *Reading machines.

Gutenmakher, L. I.
ELECTRIC MODELING: A NEW DIVISION OF RADIOELECTRONICS. Foreign Developments in Machine Translation and Information Processing no. 36. 22 Sep 61 [49]p. JPRS: 8950.
Order from OTS or SLA $4.60 61-28561

Trans. of mono. 100 Let so Dnya Rozhdenii A. S. Popovi, Yubileina Sessiya (100 Years Since the Birth of A. S. Popov; Jubilee Session) Moscow, 1960, p. 245-262.

DESCRIPTORS: *Memory devices, Control systems, Coding, Information theory, *Machine translation, *Electrical engineering, Computers, Data processing systems, Data storage systems, Data transmission theory, Reading machines, *Radio waves, *Electronics, Electronic equipment
Electric modeling is a new method of artificial reproduction (imitation) of extremely complex processes - physical, chemical, biophysical, biochemical, economic - for the purpose of analyzing and synthesizing them. This method makes it possible to imitate in electrical circuits the phenomena analogous to the phenomena of electromagnetic wave propagation in space or in waveguides, of filtration of underground waters under hydrotechnical structures (dams and bridges) and petroleum and gas in oil deposits, of heat phenomena in the firebox of a steam locomotive and in an atomic boiler. Electric modeling enables the substituting for a massive real object (aircraft, blooming mill) a circuit of a system of automatic regulation or control for a model and thereby obtain the possibility of quickly and correctly selecting the operating conditions and apparatus, as well as realizing complex logical networks analogous to the logic of action in certain acts of the human higher nervous systems. (Extract)

Palladin, A. V.
OPENING ADDRESS OF THE GENERAL MEETING OF THE ACADEMY OF SCIENCES UKRAINIAN SSR. 20 Dec 61 [8]p. JPRS: 11752.
Order from OTS or SLA $1.10 62-15212

Trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1961, no. 5, p. 554-557.

DESCRIPTORS: *Scientific organizations, Conferences, Scientific research.

Preuss, L. E. and Alt, C. E.
EVAPORATION OF METALS IN VACUO AS A FUNCTION OF THEIR DISTRIBUTION ON THE EVAPORATION SURFACE (EXPERIMENTAL RESULTS OF RADIOAUTOGRAPHY AND DISTILLATION-CAMERA PHOTOGRAPHS) PT. 1 (Die Verdampfung von Metallen im Vakuum in Abhängigkeit von ihrer Verteilung auf der Verdampfungsunterlage; Experimentelle Ergebnisse mittels Autoradiographie und Destillations-Kamera -Aufnahmen, I. Teil). [1961] [32]p. (foreign text included) 10 refs.
Order from SLA $3.60 61-20446

Trans. of Vakuum-Technik (Germany) 1960, v. 9, no. 4, p. 93-100.

DESCRIPTORS: *Evaporation, *Metals, Distilling plants, *Vacuum apparatus, Distribution, Surfaces, *Autoradiography, Surface tension, Radioactivity, Condensation, *Cameras, Photographic emulsions, Radioactive isotopes, Thin films, Particle trajectories

A new method, which has been developed for the self-imaging of the spatial confines of the distillation geometry of vacuum evaporation sources, has been used in this work to map the regions of distilland emanation from a series of simple metal evaporation sources. Image formation is achieved by condensation of a radioactive metal distilled at the image plane of a simple vacuum distillation camera. The autoradiographic process with the gross apposition method is utilized to intensify the very tenuous condensed metal image. This report consists of a review of the technique; and some images of certain distillation geometries are presented by this method. The influence of surface tension effects, wetting, filament temperature and system pressure on the distillation geometry have been studied by this system for very small charge masses.

Samson, V.
BASIC TRENDS OF SCIENTIFIC INVESTIGATIONS OF THE ACADEMY OF SCIENCES OF THE LATVIAN SSR IN 1961 (Osnovnye Napravleniya Nauchnykh Issledovanii Akademii Nauk Latviskoi SSR v 1961 Godu). 17 Oct 61 [34]p. JPRS: 10463.
Order from OTS or SLA $3.60 61-28950

Trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Izvestiya, 1961, no. 2(163) p. 17-29.

DESCRIPTORS: Scientific organizations, *Scientific research, Physics, Geology, Chemistry, Biology, Literature, Social sciences, Medical research, Communism, Growth.

Communication Theory

Karmazov, N. G.
ORGANIZATION AND PLANNING OF LONG-DISTANCE TELEPHONE COMMUNICATIONS. 24 Nov 61 [357]p. 23 refs. JPRS: 11182.
Order from OTS or SLA $21.00 62-13522

Trans. of mono. Organizatsiya i Planirovanie Mezhdugorodnoi Telefonnoi Svyazi, Moscow, 1960, p. 3-240.

DESCRIPTORS: *Telephone communication systems, Communication systems, Multichannel telephone systems, Telephone lines, Design, Operation, Economics.

Sergienko, F. K.
A METHOD OF MULTIPLE PHASE MANIPULATION AND A DEVICE FOR ITS ACCOMPLISHMENT. 6 Oct 61 [5]p. MCL-1316/1 + 2. AD-265 720
Order from OTS or SLA $1.10 61-28984

Unedited rough draft trans. from Byulleten' Izobretenii (USSR) 1960, no. 16 (USSR [patent appl.] announcement no. 648861/26, 29 Dec 59).

DESCRIPTORS: Communication systems, *Telegraph systems, *Telegraph transmitters, Telegraph signals, *Phase modulation, Coding, Modulation.

The method of multiple phase manipulation differs from others in that to eliminate the ambiguity of the phase upon the reception, transmission is accomplished by an n-position binary code obtained as a result of adding the preceding code transmission and the binary signal to be transmitted, according to the modulus 2^n. To add and store the preceding code combination, its transmitting end has a discrete counting device with additional registers for converting from an in-series code to a parallel code and vice versa.

SOCIAL SCIENCES

ACTIVITY OF THE RED CROSS AND RED CRESCENT SOCIETIES IN RURAL AREAS. 14 Aug 61 [9]p. JPRS: 9860.
Order from OTS or SLA $1.10 61-27731

Trans. of Sovetskii Krasnyi Krest (USSR) 1961, no. 2(56) p. 1-3.

DESCRIPTORS: *Rural areas, *Agriculture, *Public health, Communism.

The rural aktiv of the Red Cross and Red Crescent is ready to carry out the January Resolution of the CC CPSU and Council of Ministers USSR. (Extract)

USSR CONSUMER GOODS AND DOMESTIC TRADE: SELECTED TRANSLATIONS NO. 6. 26 July 61, 53p. JPRS: 8627.
Order from OTS $1.50 61-31548

DESCRIPTORS: Commerce, *Shoes, Production, *Textile industry, *Washing machines, *Refrigeration systems, Fruits, Vegetables, Clothing, Rayon fibers, *Agriculture, Economics, Consumption.

Contents:
USSR footwear production, by V. Pankrat'ev (Nauchnye Doklady Vysshei Shkoly. Ekonomicheskie Nauki (USSR) 1961, no. 1, p. 111-excerpt)
Speeding up the development of the knitwear industry, by N. N. Mirotvortsev (Tekstil'naya Promyshlennost' (USSR) 1961 [v. 21] no. 3, p. 1-4, excerpts)
Planning the consumption of raw material for the production of dairy products, by M. Dement'ev (Molochnaya Promyshlennost' (USSR) 1961 [v. 22] no. 2, p. 23-24)
The "Nistru" washing machine (Sovetskaya Torgovlya (USSR) 1961, 6 Apr)
The Orenburg refrigerator (Novye Tovary (USSR) 1961 no. 2, p. 13)
Development of the sugar industry in the Kuban (Sakharnaya Promyshlennost' (USSR) 1961 [v. 35] no. 3, p. 5)
Ways to expedite the turnover of goods in cooperative trade, by R. Lokshin (Sovetskaya Potrebitel'skaya Kooperatsiya (USSR) 1961, no. 2, p. 50-53)
Something new in the deliveries of goods: procedure for submitting orders to industry (Sovetskaya Torgovlya (USSR) 1961, 13 Apr)
The use of city and rural retail prices in settling for goods, by V. Kovylin (Sovetskaya Potrebitel'skaya Kooperatsiya (USSR) 1961, no. 3, p. 57-58)
Utilize local resources better, by A. Artem'ev (Obshchestvennoe Pitanie (USSR) 1961, no. 3, p. 3-6)
Satisfy the demand for fruit and vegetables more fully, by A. Ivanov (Sovetskaya Torgovlya (USSR) 1961, no. 3, p. 7-11)
Wholesale fair for haberdashery, perfume and cosmetic products, by S. Sarukhanov (Sovetskaya Torgovlya (USSR) 1961, no. 3, p. 24-27)
Important consumer cooperative business; production of agricultural products (Sovetskaya Potrebitel'skaya Kooperatsiya (USSR) 1961, no. 4, p. 5-8)
Competition among Azerbaidzhan cities and rayons, by V. Kerimov (Obshchestvennoe Pitanie (USSR) 1961, no. 4, p. 10).

Dadayan, V.
SHAPING SOCIALIST REPRODUCTION WITH THE USE OF MATHEMATICS (Matematicheskoe Modelirovanie Sotsialisticheskogo Vospoizvodstva). 27 Oct 61 [11]p. JPRS: 10734.
Order from OTS or SLA $1.60 62-13329

Trans. of Ekonomicheskaya Gazeta (USSR) 1961, no. 6, p. 5.

DESCRIPTORS: Industrial production, Economic aspects, *Economics, *Mathematics.

The use of a mathematical model of socialist reproduction broadens the sphere of economic experimentation, the role of which is attested by the fact that it is impossible to experiment on a national scale without incurring risks of large losses. (Extract)

Jonsson, Erik T.
HOW ONE READS 130 JOURNALS AND KEEPS TRACK OF 8,000. [1961] 6p. (illus. omitted)
Order from SLA $1.10 62-10063

Trans. of Tidskrift för Dokumentation (Sweden) 1959, v. 15, no. 2, p. 13-16.

DESCRIPTORS: *Libraries, Chemistry, Periodicals, Literature, Reading, *Documentation.

It is done with the aid of the two chemical reference publications Chemical Abstracts and Chemisches Zentralblatt. No other technical field of corresponding scope offers such good control possibilities. Chemical Abstracts alone contained more than 115,000 references in 1958, representing literature from 85 countries in more than 40 different languages. To keep track of the special field of the company, more than 3000 references are extracted, that is to say between 2 and 3% out of the chemical literature, and a coverage as nearly 100 percentual as possible is striven for in this for the particularly important groups.

Makarchuk, N.
PREPARING FOR THE NEW ACADEMIC YEAR (K Novomu Godu Gotovimsya Seichas). 13 Oct 61 [6]p. JPRS: 10531.
Order from OTS or SLA $1.10 61-28895

Trans. from Sovetskaya Moldaviya (USSR) 1961, no. 177, p. 2.

DESCRIPTORS: *Communism, *Education, *Public opinion, Conferences, *Propaganda, Culture, Social communication, Political science.

According to preliminary information 25,000 to 26,000 wage-earners, clerks and intelligentsia (15,000 more than last year) will take part in the political education system of the Region (Soviet Moldavia). In addition, 65 percent of participants will be non-Communists. Economic theory in various forms will be studied by almost ten thousand Communist and non-Communists. In perfecting the style and methods of propaganda work, the District Committee of the Party and leading Party Organizations do everything to ensure that knowledge acquired in the process of study is more actively used in their everyday affairs by Communists and non-Communists for the carrying out of the tasks of the third year of the Seven-year Plan. (Extracted)

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5579
Petrichenko, Aleksey M., and Y. A. Sukhodol'skaya
MODERN FOUNDING IN CHINA (Sovremennoye liteynoye proizvodstvo Kitaya) Moscow, Mashgiz, 1960. 198p. 1,200 copies printed. 1p.

BR-RUM/5610
Caius, Jacob
MATHEMATICAL INTRODUCTION TO FLUID MECHANICS (Introduction mathematique a la mecanique des fluides) Bucharest, Ed. de l'Academie de la Republique Populaire Roumaine, 1959. 1286p. Errata slip inserted. No. of copies printed not given. 5p.

BR-SOV/5611
Fishman, Mikhail A., and D. S. Sobolev
PRACTICES IN NONFERROUS AND RARE-METAL ORE DRESSING; V. 3: DRESSING OF NICKEL AND COBALT ORES (Praktika obogashcheniya rud tsvetnykh i redkikh metallov; t. 3: Obogashcheniye nikelevykh i kobal'tovykh rud) Moscow, Gosgortekhizdat, 1961. 150p. Errata slip inserted. 2,500 copies printed. 2p.

dR-SOV/5612
Alisova, S. P., and others
EQUILIBRIUM DIAGRAMS OF METAL [ALLOY] SYSTEMS, PUBLISHED IN 1955. NO. 1 (Diagrammy sostoyaniya metallicheskikh sistem, opublikovannyye v 1955 godu. vyp. 1.) Moscow, 1959. 135p. Errata slip inserted. 1,500 copies printed. 8p.

BR-SOV/5613
Shevchenko, Viktor B., and B. N. Sudarikov
URANIUM TECHNOLOGY (Tekhnologiya urana) Moscow, Gosatomizdat, 1961. 329p. Errata slip inserted. 6,000 copies printed. 6p.

BR-SOV/5614
Zhdanov, German S.
SOLID-STATE PHYSICS (Fizika tverdogo tela)[Moscow] Izd-vo Moskovskogo univ., 1961. 500p. Errata slip inserted. 10,000 copies printed. 5p.

BR-SOV/5615
Bogdanovich, Mikhail M., and P. A. Il'in
GYROSCOPIC INSTRUMENTS AND DEVICES; FUNDAMENTALS OF THE THEORY (Giroskopicheskiye pribory i ustroystva: osnovy teorii) Leningrad, Sudpromgiz, 1961. 359p. Errata slip inserted. 6,900 copies printed. 5p.

BR-SOV/5617
Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po tochnosti v mashinostroyenii i priborostroyenii.
TRANSACTIONS OF THE USSR ACADEMY OF SCIENCES. INSTITUTE OF MACHINE SCIENCE. SEMINAR ON ACCURACY IN MACHINE AND INSTRUMENT MANUFACTURE. NO. 15 (Trudy. vyp. 15) Moscow, Izd-vo AN SSSR, 1961. 93p. Errata printed on the inside of back cover. 2,300 copies printed. 2p.

BR-SOV/5623
Kabanov, Nikolay S., and E. S. Slepak
RESISTANCE BUTT-WELDING PROCESS (Tekhnologiya stykovoy kontaktnoy svarki) Moscow, Mashgiz, 1961. 249p. 13,000 copies printed. 2p.

BR-SOV/5624
Daragan, V. Kh., and others
PROSPECTING AND EXPLORATION OF BORON RAW MATERIAL DEPOSITS (Poiski i razvedka bornogo syr'ya) Moscow, Gosgeoltekhizdat, 1960. 102p. 5,000 copies printed. 3p.

BR-SOV/5625
Karapet'yants, Mikhail K, and Ch'eng Kuang-yueh
BOILING POINT AND SATURATED VAPOR PRESSURE OF HYDROCARBONS (Temperatura kipeniya i davleniye nasyshchennogo para uglevodorodov) Moscow, Gostoptekhizdat, 1961. 241p. Errata slip inserted. 2,700 copies printed. 2p.

BR-SOV/5626
INSTALLATION AND REPAIR OF COOLING PLANTS (Montazh i remont kholodil'nykh ustanovok) Moscow, Gostorgizdat, 1961. 340p. 20,000 copies printed. 5p.

BR-SOV/5627
Zharlikov, Nikolay V.
COMBINED CUTTING TOOLS (Kombinirovannyye rezhushchiye instrumenty) Moscow, Mashgiz, 1961. 76p. 11,000 copies printed. 2p.

BR-SOV/5628
Akademiya nauk SSSR. Institut biologicheskoy fiziki
ROLE OF PEROXIDES AND OXYGEN DURING PRIMARY STAGES OF RADIOBIOLOGICAL EFFECTS (Rol' perekisey i kisloroda v nachal'nykh stadiyakh radiobiologicheskogo effekta) Moscow, 1960. 157p. 4,500 copies printed. 2p.

BR-SOV/5629
Kolyada, Ivan A., and P. M. Gofman-Zahkarov
AIRTIGHTNESS OF GAS PIPELINES AND DETECTION OF GAS LEAKS (Germetichnost' gazoprovodov i opredeleniye utechki gaza) Moscow, Gostoptekhizdat, 1960. 68p. 6,100 copies printed. 1p.

BR-SOV/5630
Freydlina, Rakhil' Khatskelevna, and S. A. Karapetyan
TELOMERIZATION AND NEW SYNTHETIC MATERIALS (Telomerizatsiya i novyye sinteticheskiye materialy) Moscow, Izd-vo AN SSSR, 1961. 102p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 10,000 copies printed. 1p.

BR-SOV/5631
Mel'nik, Anatoliy A.
HELICOPTER IN THE SERVICE OF GEOLOGY AND OTHER BRANCHES OF THE NATIONAL ECONOMY (Vertolet na sluzhbe geologii i drugikh ostrasley narodnogo khozyaystva)Moscow, Gosgeoltekhizdat, 1960. 81p. 5,000 copies printed. 2p.

BR-SOV/5632
Medvedeva-Orlova, Tamara Pavlovna
TEXTBOOK ON THE DESIGN OF AVIATION INSTRUMENTS. NO. 3: LINK-TYPE TRANSMITTING AND MULTIPLYING MECHANISMS (Posobiye po proyektirovaniyu aviatsionnykh priborov. vyp. 3: Rychazhnyye peredatochno-mnozhitel'nyye mekhanizmy) Moscow, Oborongiz, 1961. 85p. Errata slip inserted. 8,400 copies printed. 1p.

BR-SOV/5633
Borisenko, Anatoliy I.
PROTECTION OF MOLYBDENUM AGAINST HIGH-TEMPERATURE GAS CORROSION (Zashchita molibdena ot vysokotemperaturnoy gazovoy korrozii) Moscow, Izd-vo AN SSSR, 1960. 82p. Errata slip inserted. 3,500 copies printed. 2p.

BR-SOV/5634
Malkov, M. P., and others
SEPARATION OF DEUTERIUM FROM HYDROGEN BY THE METHOD OF DEEP FREEZING (Vydeleniye deyteriya iz vodoroda metodom glubokogo okhlazhdeniya) Moscow, Gosatomizdat, 1961. 150p. Errata slip inserted. 4,000 copies printed. 2p.

BR-SOV/5635
Eychis, Andrey P.
CRYSTALLITE: PROTECTIVE AND DECORATIVE COVERING OF METALS (Kristallit; zashchitno-dekorativnoye pokrytiye metallov) Moscow, Mashgiz, 1961. 142p. 7,000 copies printed. 1p.

BR-SOV/5636
Palatnikov, Yevgeniy A.
CALCULATION OF REINFORCED-CONCRETE SLABS OF AIRPORT SURFACING (Raschet zhelezobetonnykh plit pokrytiy aeroportov) Moscow, Oborongiz, 1961. 94p. 3,050 copies printed. 1p.

BR-SOV/5637
Fil'chakov, Pavel Fedos'yevich
THE THEORY OF PERCOLATION BENEATH HYDROTECHNICAL STRUCTURES; V. 1 (Teoriya fil'tratsii pod gidrotekhnicheskimi sooruzheniyami, t. 1) Kiyev, Izd-vo AN UkrSSR, 1959. 307p. 4,000 copies printed. 3p.

BR-SOV/5638
Fil'chakov, Pavel Feodos'yevich
THE THEORY OF PERCOLATION BENEATH HYDROTECHNICAL STRUCTURES; V. 2 (Teoriya fil'tratsii pod gidrotekhnicheskimi sooruzheniyami; t. 2) Kiyev, Izd-vo AN UkrSSR, 1960. 255p. 4,000 copies printed. 3p.

BR-SOV/5639
Lopukhina, Yelena M., and
G. S. Somikhina
DESIGN OF SINGLE-AND THREE-PHASE INDUCTION MICROMOTORS (Raschet asinkhronnykh mikrodvigateley odnofaznogo i trekhfaznogo toka) Moscow, Gosenergoizdat, 1961. 312p. 17,000 copies printed. 4p.

TRANSLATIONS IN PROCESS

A LOOK AT THE WORLD IN THE YEAR 2000.
Frankfurter Illustrierte (West Germany) 1961, v. 49, no. 23, p. 2-47.

MEDICAL RADIOLOGY.
Meditsinskaya Radiologiya (USSR) 1961, v. 6, no. 11, p. 1-97.

Blochinzev, D. I.
FUNDAMENTALS OF QUANTUM MECHANICS.
Mono. Osnovy. Kvantovoi Mekhaniki, 3d ed.
Moscow, 1961.
To be published by GB.

Bozhovich, L. I.
PSYCHOLOGICAL STUDY OF CHILDREN IN BOARDING SCHOOL: SELECTED PARTS OF CHAP. I AND II.
Russian mono. Psikhologicheskoe Izuchenie Detei v Shkole-Internate, 1960, p. 3-51, 201-208.

Dominicis, R. de and others.
ON THE PROTECTIVE EFFECT OF CORTISONE FOR THE CUTANEOUS LESIONS CAUSED BY X-RAYS.
Arch[ivio] de Vechi [per l']Anat[omia] Pat[ologica] (Italy) 1959, v. 29, p. 485-513.

Grandpierra, Strumza and others.
MEDICINE AND THE COSMOS.
Constellation Medicine (France?) 1961, no. 10, p. 6-31.

Ivanov, V. V.
SOME PROBLEMS IN MACHINE TRANSLATION IN THE USSR.
Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 10, 29p.

Jelke, Hugo.
ACUTE LYMPHATIC LEUKEMIA IN UNIOVULAR TWINS. CLINICAL COMMUNICATION WITH PARTICULAR REFERENCE TO ETIOLOGY.
Acta Paediatrica (Sweden) 1939, v. 27, p. 87-137.

Klychnikov, V. M.
APPARATUS FOR DETERMINING THE WATER PERMEABILITY OF SOILS UNDER FIELD CONDITIONS.
PL-480 Pochvovedenie (USSR) 1952, p. 851-859.

Korobeinikov, V. P., Mel'nikova, N. S., and Ryazanov, E. V.
THE THEORY OF THE POINT EXPLOSION.
Russian mono. Teoriya Tochechnogo Vzryva, 1961, p. 3-330.

Mel'chuk, I. A.
SOME PROBLEMS OF MT ABROAD.
Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 6, 44p.

Shevarevaya, T. P., ed.
BUREAU OF CYCLIZATION, ADMINISTRATION OF GAME PRESERVES AND HUNTING OF THE CHIEF ADMINISTRATION OF FORESTS AND PROTECTION OF TIMBER, RESOURCES OF THE MINISTRY OF AGRICULTURE OF THE USSR. TRANSACTIONS.
Byuro Kol'tsevaniya. Trudy (USSR) 1957, no. 9, p. 1-320.

Vol'kenshtein, F. F.
ELECTRONIC THEORY OF CATALYSIS ON SEMICONDUCTORS.
Mono. Elektronnaya teorii kataliza na poluprovodnikakh, Moscow, 1960.
To be published by GB.

Vvedenskii, Tigrii Aleksandrovich.
STANDARDIZATION AND STANDARD SPECIFICATIONS IN THE MACHINERY INDUSTRY.
PL-480 mono. Standartizatsiya i Normalizatsiya v Mashinostroenii, Kiev, 1957, 76p.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 7, Number 1.

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No changes are necessary for this issue.